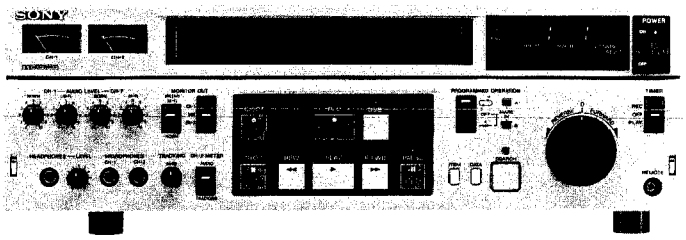
SONY®

VIDEOCASSETTE RECORDER

SVO-9620



S-VHS 625

VHS
PAL

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About This Manual

This manual explains how to use the Sony SVO-9620 videocassette recorder. This section explains the purpose and organization of the manual. Reading this section first will help you decide which parts of the manual you should read first, depending on your experience of operating VTRs.

Purpose and intended readership

This manual contains the information you need to operate this VTR, including the names and functions of the component parts, details of settings and adjustments, and the procedures for recording and playback.
This VTR is designed for use by a wide range of users, from cable television stations to general business operators. Likewise, this manual is aimed at the same wide range of users, from experienced engineers to those users who have never used this type of VTR before. If you find any unfamiliar terms while reading the manual, consult the footnotes at the bottom of the page as well as the glossary at the end of the manual.

Organization

The following is a brief summary of the chapters and appendixes constituting this manual. Note also that the opening page of each chapter gives a brief summary of the contents of the chapter.

Chapter 1, "SVO-9620 Introduction" describes the special features of the VTR.

Chapter 2, "Location and Function of Parts and Controls" explains the purposes and functions of the parts of the VTR.
If you have used a VTR before, you will be able to operate the VTR after briefly reading this chapter. If you have never used this type of VTR before, read through this chapter thoroughly to familiarize yourself with the parts and controls.
Refer to this chapter to clarify the functions of the controls while you are operating the VTR.

Chapter 3, "Before Using Your SVO-9620" explains necessary precautions and how to set up the VTR prior to operation.

Chapter 4, "Recording" explains the overall recording operation, and also explains audio signal dubbing, timer recording, and sensor recording.

Chapter 5, "Playback" explains playback, search and repeat, and timer playback.

Chapter 6, "Maintenance" explains troubleshooting, error messages and their meanings, and the cleaning of the video heads.

Appendixes

The appendixes contain the following sections:
- Menu Items and Their Functions
- Specifications
- Glossary

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Conventions

Procedure format

This type of figure shows the switches and controls used to achieve an operation. The numbers correspond to those in the figure that follows.

Technical terms

Technical terms are explained in the glossary of terms at the end of this manual.

Reference information

Points you to another section of the manual where you can find additional information. Written in italics.

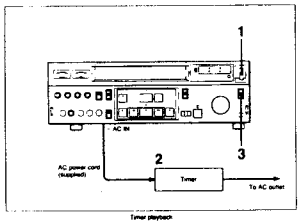
Important notes

Be sure to read the sections marked Note. They explain points that you should be aware of if you are to operate the VTR correctly and prevent malfunctions. Also read "Safety Precautions" and "Handling Precautions" on page 3-3(E).

Timer Playback

Using an optional timer, you can automatically start playback at a preset time.

Timer playback



Timer playback

1 Set the POWER switch of the VTR to ON.

2 Set the playback start and stop times with the timer.
For details, refer to the operation manual provided with the timer.

3 Set the TIMER switch to PLAY.

The timer automatically turns on the VTR power at the playback start time.

To stop playback during timer playback
Press the STOP button of the VTR.

Notes

- The VTR automatically rewinds the tape then stops. If, however, you set repeat playback between a particular point and the tape end, the VTR automatically rewinds the tape, enters repeat playback mode and starts playback repeatedly upon reaching the tape end.
- When the playback stop time is reached, the timer turns off the VTR power with the tape wound around the head drum. At the next playback start time, the timer again automatically turns on the VTR power. The tape stops momentarily, then timer playback starts.

1-4

Chapter 1
SVO-9620 Introduction

This chapter describes the special features of the VTR.

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SVO-9620 Features

The VTR has the following features.

High picture quality

S-VHS format
This VTR uses the S-VHS format. This provides a high-quality color pictures with a resolution of more than 400 lines.

Wide track design
The recording/playback devices of this VTR incorporate a 58 µm track design to enable stable sound and pictures.

Digital comb filter
This VTR uses a digital comb filter to separate the composite video signal into Y and C signal. This enables sharp picture definition.

YX filter
This VTR also uses a YX filter to reduce cross-color (where one color mixes with another) or beat (diagonal stripes).

High sound quality

Hi-fi audio recording (four-channel audio signal recording)
This VTR incorporates a hi-fi(AFM: Audio Frequency Modulated) stereo audio recording system to provide high-quality sound recording. The recording and playback of two channels, of normal audio and hi-fi audio, giving a total of four channels, is possible. A commentary or music can be added to channel of the normal audio by using the audio dubbing function.

High reliability

Direct-drive reel motors
This VTR employs two direct-drive reel motors. A highly rigid material is used for the lower drum to prolong its service life. In addition, the beltless mechanism offers high reliability.

Wide range of functions

LED time counter
The time counter displays the control (CTL) signals recorded onto a tape to indicate the tape running time in hours, minutes and seconds. This is also useful for checking the recording time.

Programmed operation
Programmed operation allows you to locate specified points on a tape and to automatically repeat a desired portion.

High-speed picture search
This VTR supports high-speed picture search with a search dial. Recognizable color pictures at speeds ranging from 1/20 to 10 times normal speed are available in search mode. This facility allows any desired point on the tape to be located quickly. If you are using the SVRM-100 remote control unit (optional), color pictures at speeds ranging from 1/20 to 10 times normal speed are also available.

Automatic control of video recording level
The automatic gain control (AGC) circuit maintains the proper video level to assure optimum-quality video recording.

Timer recording and playback
By setting the TIMER selector to either REC or PLAY, the VTR records or plays back when the power is automatically turned on.

Menu function
The menu function allows settings to be made easily by using the buttons on the front panel.

Playback of dual color systems
This VTR can play back both PAL- and NTSC-recorded signals through SYSTEM SELECT switch setting. The NTSC-recorded signals are played back based on the $NTSC_{4.43}$ system.

Auto head cleaner
Each time the VTR starts and ends playback/recording, a cleaning roller automatically passes over the video/FM audio (rotary) heads, removing tape residue and enabling preventive care of the tape heads.

Automatic cassette ejection at tape end
When a tape reaches its end, the VTR automatically ejects the cassette. This prevents accidental erasure of valuable data. Automatic tape ejection can be inhibited through menu operation.

Connectors

External SYNC IN connector
The SYNC IN connector enables the VTR to be synchronized with other video equipment.

8-pin VTR connector
The TV OUT connector allows the VTR to simultaneously monitor video and audio signals by connecting an external monitor with a single cable.

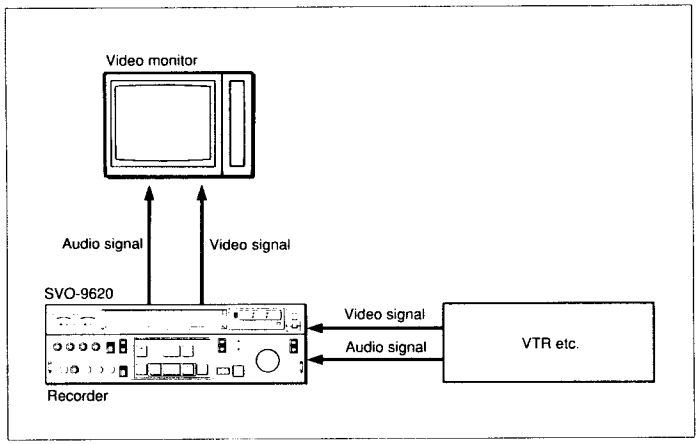
Loop-through output
A video input signal, connected to one VIDEO IN connector, is directly output from the other VIDEO IN connector. Pictures appear on the connected monitor, therefore, with good resolution even during recording. Hence you can record pictures while viewing them on the monitor.

Suggested Configurations

The following configurations are suggested.
- Recording signals input from other video equipment
- Recording signals sent via a satellite
- Controlling the VTR using a simple editing control unit

Recording Signals Input from Other Video Equipment

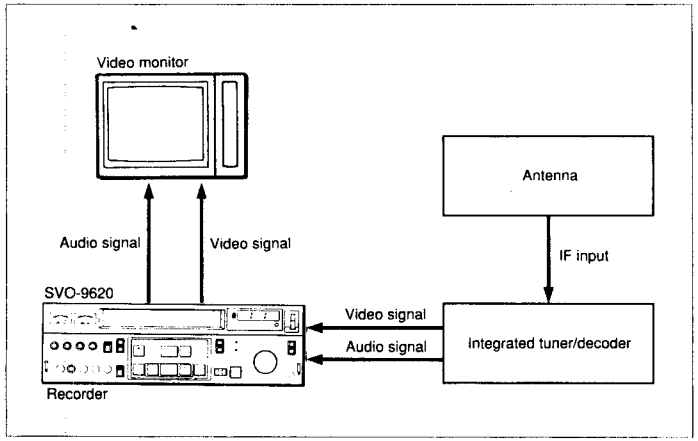
The following configuration is suggested for recording video signals input from other video equipment.



Recording signals input from other video equipment

Recording Signals Sent via a Satellite

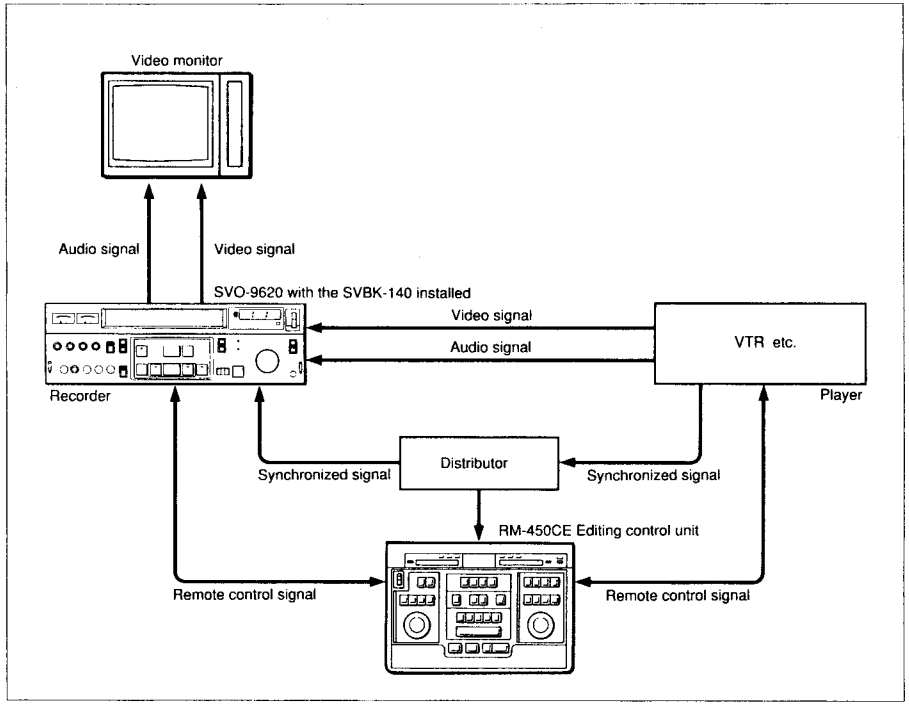
The following configuration is suggested for automatically recording signals sent via a satellite by using the sensor recording function.



Recording signals sent via a satellite

Controlling the VTR Using a Simple Editing Control Unit

The following configuration is suggested for controlling the VTR with the optional SVBK-140 RS-422A interface board and other video equipment by using the RM-450CE editing control unit.



Controlling the VTR using a simple editing control unit

Optional Accessories for Expanding the System

The following accessories can be used to enhance the VTR.

Model name	Function
SVRM-100 Remote control unit	This unit enables remote control of the VTR by connecting the unit to the REMOTE connector of the VTR. But, the following buttons do not function in this configuration. • FREEZE button • INDEX button • MARK button • ERASE button
SVBK-100 33-pin interface board	This board provides a 33-pin parallel interface that enables the VTR to be connected to a remote control unit (RM-580/500/450CE/440 etc.) employing a 33-pin parallel interface board. You can thus control the VTR from the remote control unit. (However, the editing function of the RM-450CE/440 does not operate.)
SVBK-120 RS-232C interface board	This board provides an RS-232C serial interface that allows a computer to be connected. You can thus control the VTR from a computer.
SVBK-130 Satellite interface board (available soon)	This board provides a satellite interface. You can use this board to construct a satellite system.
SVBK-140 RS-422A interface board	This board provides an RS-422A serial interface that allows the RM-450CE editing control unit to be connected. You can thus control the VTR from this editing control unit.
SVBK-150 Digital noise reduction board	This board reduces digital chroma noise and corrects time base errors to increase picture sharpness, reduce jitter, and reduce color drop out interpolation.
SVBK-160 Time code board	This board reads and generates time codes. When you want to record time codes onto a normal audio track of a tape, or play back a tape onto which time codes have been recorded, use this board with the SVBK-130 or SVBK-140 because this board can not function without them. For details, refer to the operation manual supplied with the SVBK-160 or contact your Sony dealer.

Chapter 2
Location and Function of Parts and Controls

This chapter explains the purposes and functions of the parts of the VTR.
If you have used a VTR before, you should be able to operate the VTR after briefly reading this chapter. If you have never used this type of VTR before, read through this chapter thoroughly to familiarize yourself with the parts and controls. While you are operating the VTR, refer to this chapter to clarify the functions of the controls.

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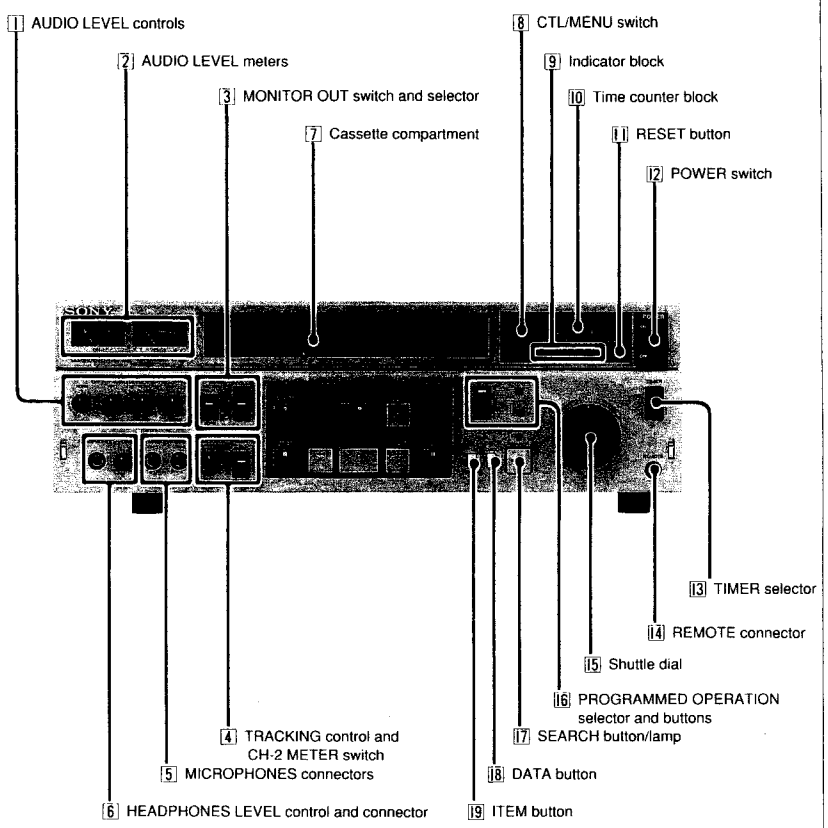
Rear Panel ..... **2-11(E)**

Front Panel



Front panel

[1] AUDIO (recording) LEVEL controls
These controls are used to adjust the audio recording level for each channel.
Hi-Fi: used to make adjustments in hi-fi recording mode.
NORM: used to make adjustments in normal recording mode.

[2] AUDIO LEVEL meters
These meters indicate the audio levels: the recording levels while the VTR is recording audio signals, and the playback levels while the VTR is playing back audio signals.

3 MONITOR OUT switch and selector METER select switch

This switch is used to select the input or output audio signal to be indicated by the AUDIO LEVEL meters 2. It can also be used to select the audio output signal to be output to the AUDIO MONITOR connector on the rear panel.

Hi-Fi: While the VTR is recording a signal, the input audio signals from the AUDIO IN Hi-Fi connectors are indicated by the AUDIO LEVEL meters 2.
When the VTR is playing back a signal, an output audio signal, recorded in hi-fi recording mode and output to the HEADPHONES connector, AUDIO MONITOR connector and TV OUT connector, are indicated by the AUDIO LEVEL meters 2.

NORM: When the VTR is recording a signal, the audio signals input through the AUDIO IN NORM connectors are indicated by the AUDIO LEVEL meters 2.
When the VTR is playing back a signal, the output audio signals, recorded in normal recording mode and output to the HEADPHONES connector, AUDIO MONITOR connector and TV OUT connectors, are indicated by the AUDIO LEVEL meters 2.

CH-1/MIX/CH-2 selector

This selector is used to select the channel to be output through the HEADPHONES connector, AUDIO MONITOR connector, and TV OUT connector. It can also be used to select the channel to which the VTR outputs the audio signal set with the METER select switch 3.

CH-1/MIX/CH-2 selector setting	Audio signal output from HEADPHONES connector	Audio signal output from AUDIO MONITOR connector and TV OUT connector
CH-1	channel-1	channel-1
MIX	stereo audio signal	mixed from channel-1 and channel-2
CH-2	*channel-2*	*channel-2*

4 TRACKING control and CH-2 METER switch

The TRACKING control is used to adjust the tracking. The CH-2 METER switch is used to select the signal indicated by the CH-2/TRACKING level meter 2.

TRACKING control

Normally, set this control to FIXED. Should noise, snow or streaks appear on a picture recorded on another VTR, set the CH-2 METER switch to TRACKING, then turn this control until the maximum audio level, as indicated by the CH-2/TRACKING level meter, is obtained.

CH-2 METER switch

This switch is used to select the function of the CH-2/TRACKING level meter 2. It can be used either as a level meter or for tracking control.

AUDIO: The meter operates as a level meter. Normally, set the switch to this position.

TRACKING: The meter is used for tracking control. To control tracking, turn the TRACKING control so that the maximum audio level, as indicated by the CH-2/TRACKING level meter, is obtained while the VTR is playing back.

5 MICROPHONES connectors(phone jacks)

To record audio signals, connect a microphone to each channel. Connect a microphone to the connector for the desired channel. Adjust the recording audio levels with the AUDIO LEVEL controls 1.

6 HEADPHONES LEVEL control and connector(stereo phone jack)

To monitor the recording/playback audio signal selected with the MONITOR OUT switch and selector 3, connect a pair of stereo headphones here. Adjust the volume with the LEVEL control.

7 Cassette compartment

Insert an S-VHS or VHS cassette here.

8 CTL/MENU(control signal/menu) switch

This switch selects the data to be displayed by the time counter block 10.

CTL: reads CTL signals on the tape and displays the tape transport time in hours, minutes and seconds. Normally, keep the switch set to this position.

MENU: Displays menu settings in STOP mode. No other operations are possible in menu mode.

9 Indicator block

Each lamp lights in the following cases:

lamp: lights when a cassette is loaded into the VTR.

AUTO OFF lamp: lights when the power is applied but moisture has condensed inside the VTR. While this indicator is lit, a cassette can not be loaded into the VTR.

S-VHS lamp: lights when the VTR is S-VHS recording or playback mode.

SENSOR REC lamp: lights while the VTR is performing sensor recording or when the VTR is ready for sensor recording.

10 Time counter block

This block displays the data (time or the menu items) selected with the CTL/MENU switch 8.

11 RESET button

Setting the CTL/MENU switch 8 to CTL causes the tape transport time to appear on the time counter block 10. Pressing this button resets the indicator to "0:00:00."

12 POWER switch

This switch turns on the power of the VTR. The AUDIO LEVEL meter 2 and the time counter block 10 will light.

13 TIMER selector

This selector is used to enable automatic recording or playback with an optional timer.

REC: automatic recording with a timer.

OFF: no timer is used. Normally, keep the selector set to this position.

PLAY: automatic playback with a timer.

14 REMOTE connector (stereo minijack)

This connector is used to connect the optional SVRM-100 remote control unit. Recording, playback, fast-forward, rewind and search operations can be remotely controlled.

15 Shuttle dial

By turning this dial with the SEARCH button 17 held down, the playback speed can be varied between 1/20 and 10 times normal speed. Turning the dial clockwise (to FORWARD) makes the tape run forwards. Turning the dial counterclockwise (to REVERSE) makes the tape run backwards. At the center "0" position, a still picture is output.

16 PROGRAMMED OPERATION selector and buttons

This selector and buttons are used to enable programmed operation.

PROGRAMMED OPERATION selector

:
- To repeatedly play a particular portion.
- To check the points memorized with the MARK IN A and B buttons.

OFF:
- For normal operation. When the VTR is to be controlled from a remote control unit connected to the REMOTE connector, set this switch to OFF.
- To memorize points set with the MARK IN A and B buttons for programmed operation.

:
- To locate a point memorized with the MARK IN A button.
- To memorize points, set with the MARK IN A button, for programmed operation.

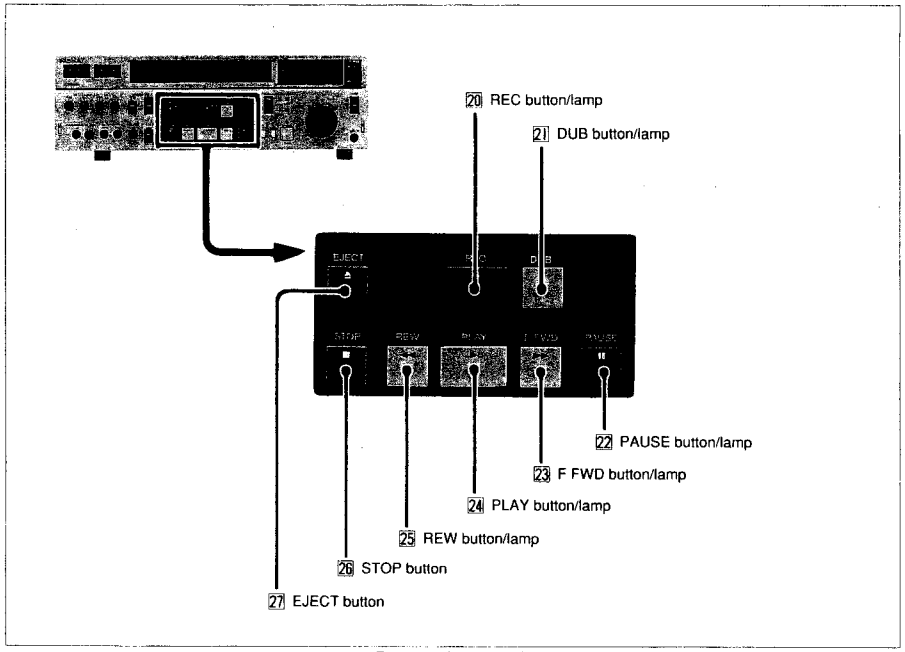
MARK IN A and B buttons

Press to memorize the current time counter value. You can memorize only one point with each button. If you press the button several times, only the last point will be memorized.

17 SEARCH button/lamp
Press to activate the shuttle dial 15. The lamp will light.

18 DATA button
With the CTL/MENU switch 8 set to MENU, press this button to set the data item selected with the ITEM button 19.

19 ITEM button
With the CTL/MENU switch 8 set to MENU, press this button to select the item to be set.



Front panel (continued)

20 REC(recording) button/lamp
For recording, press the PLAY button 24 while holding down the REC button. The lamp will light during recording.

21 DUB(audio dubbing) button/lamp
To add sound to a tape on which a video signal has been previously recorded, press the PLAY button 24 while holding down the DUB button. The sound will be recorded onto a normal audio channel set with the menu (channel-1, channel-2, or channel-1 and channel-2). The lamp lights during recording.

22 PAUSE button/lamp
Press to stop the tape momentarily. The lamp lights while the VTR is in STOP mode.
To restart the tape, press the PAUSE button again.

23 F FWD(fast-forward) button/lamp
Press to fast-forward the tape. The lamp lights during fast-forwarding.

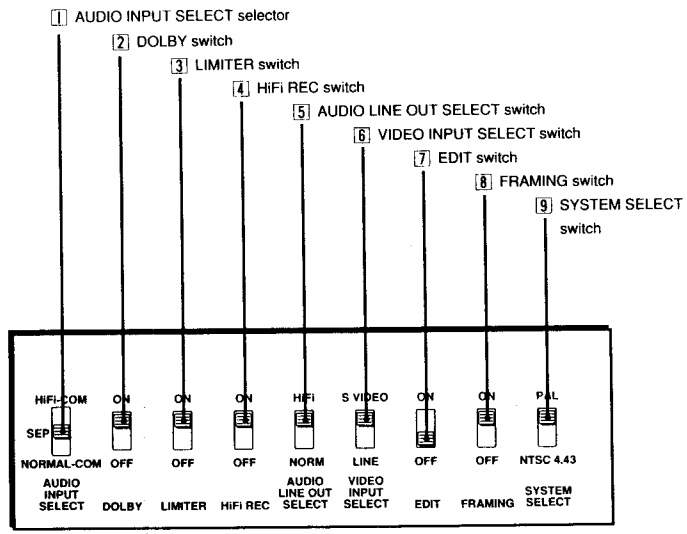
24 PLAY(playback) button/lamp
Press to play back the tape. Pressing this button while holding down the REC button 20 starts recording. The lamp lights.

25 REW(rewind) button/lamp
Press to rewind the tape. The lamp lights while the VTR is rewinding the tape.

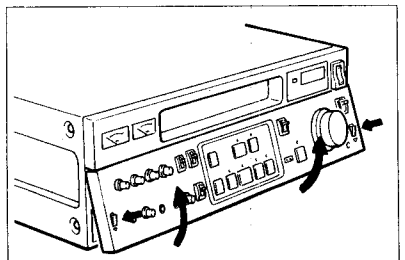
26 STOP button
Press to completely stop the tape transport.

27 EJECT button
Press to eject the cassette.

Sub Panel

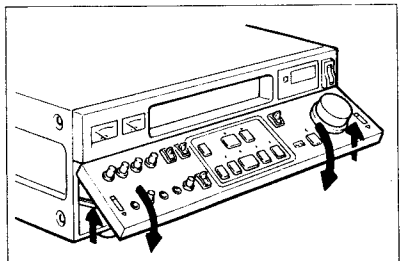


How to open the lower front panel



While pushing down the buttons on the right and left sides of the panel, pull the lower panel up.

How to close the lower front panel



While lifting the stays on the right and left sides of the panel, drop the lower panel down.

Sub panel

1 AUDIO INPUT SELECT selector

This selector is used to select the audio signal input through the Hi-Fi connector or NORM connector for recording on a hi-fi or normal recording channel. To record a signal in hi-fi recording mode, set the HiFi REC switch 4 to ON.

Selector setting	Signals to be recorded	Channels to be recorded
HiFi-COM	Signal from Hi-Fi connectors	On both hi-fi and normal recording channel
SEP	Signal from Hi-Fi connectors	On hi-fi recording channel
	Signal from NORM connectors	On normal recording channel
NORMAL-COM	Signal from NORM connectors	On both hi-fi and normal recording channel

2 DOLBY switch

This switch is used to select whether the Dolby[1] system is applied to normal recording and playback. This system provides a high S/N ratio and improves sound quality.

ON: records or plays back the sound with the Dolby system.

OFF: records or plays back the sound without the Dolby system.

Note

Be sure to make the same selection when recording and playing back. If the Dolby switch is set to OFF when the VTR is playing back a signal recorded with the Dolby system, high sound levels may be emphasized.

3 LIMITER switch

After adjusting the recording levels, set this switch to ON to activate the limiter circuit. This circuit enables the constant recording of normal audio signals and prevents distortion caused by excessive input, for example a sudden loud noise when recording the signal input from a microphone.

ON: activates the limiter circuit.

OFF: deactivates the limiter circuit.

4 HiFi REC(hi-fi recording) switch

This switch is used to select whether the VTR records audio signals in hi-fi recording mode.

ON: records in hi-fi recording mode (Four-channel recording)

OFF: does not record in hi-fi recording mode (Normal recording mode only)

5 AUDIO LINE OUT SELECT switch

This switch is used to select the audio signal to be output from the AUDIO OUT NORM/Hi-Fi connectors on the rear panel.

HiFi: outputs a hi-fi recording signal.

NORM: outputs a normal recording signal.

Note

The hi-fi recording signal is output from the AUDIO OUT Hi-Fi connector, regardless of how this switch is set.

1) Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation. "DOLBY" and the double-D symbol ⧈ are trademarks of Dolby Laboratories Licensing Corporation.

Sub Panel (Continued)

6 VIDEO INPUT SELECT switch

This switch is used to select the connector to which a video signal is input: the VIDEO IN connector or S VIDEO IN connector.

S-VIDEO: records a Y and C signal input through the S-VIDEO IN connector.

LINE: records a video signal input through the VIDEO IN connector.

7 EDIT switch

Set this switch to ON when duplicating a signal. This will prevent degradation of the video signal.

ON: Duplicating the signal

OFF: Normal operation

8 FRAMING switch

This switch is used to set whether the VTR perform color frame controls when the VTR is recording a scene transition.

ON: performs color frame controls. Normally, keep the switch to this position.

OFF: does not perform color frame controls.

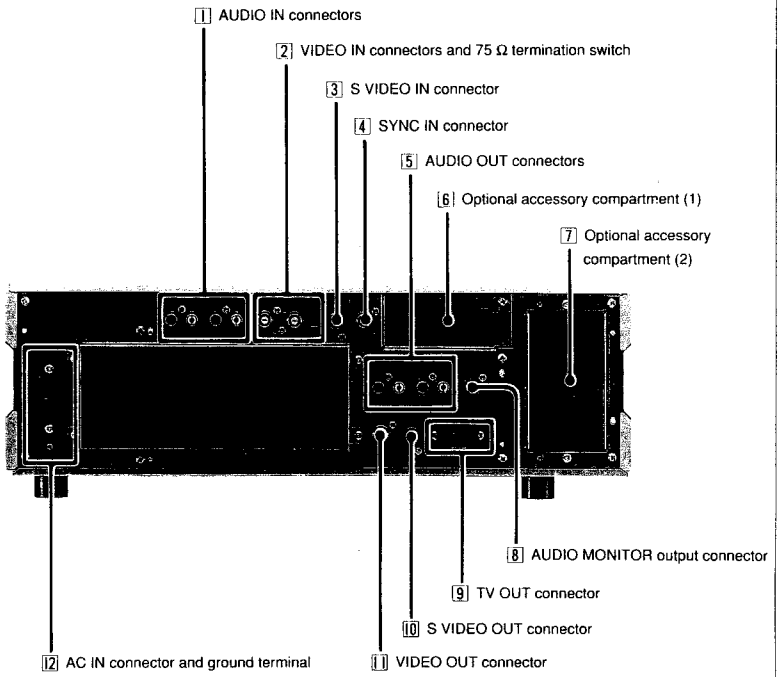
9 SYSTEM SELECT switch

This switch is used to select the color system of a video signal to be played back.

PAL: To play back PAL-recorded signals. Normally, set this switch to this position.

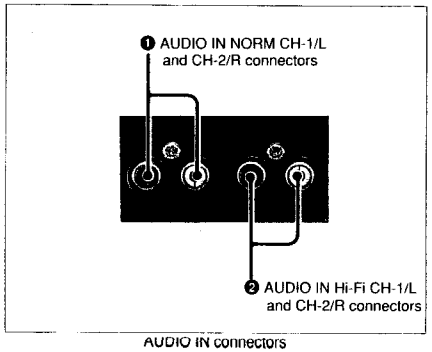
NTSC 4.43: To play back NTSC-recorded signals using a monitor which can display signals of multiple color systems, such as Sony PVM-1442QM.

Rear Panel


1 AUDIO IN connectors
2 VIDEO IN connectors and 75 Ω termination switch
3 S VIDEO IN connector
4 SYNC IN connector
5 AUDIO OUT connectors
6 Optional accessory compartment (1)
7 Optional accessory compartment (2)
8 AUDIO MONITOR output connector
9 TV OUT connector
10 S VIDEO OUT connector
11 VIDEO OUT connector
12 AC IN connector and ground terminal

Rear panel

1 AUDIO IN(input) connectors



AUDIO IN connectors

❶ AUDIO IN(input) NORM CH-1/L(channel-1/left) and CH-2/R(channel-2/right) connectors (phono jacks)

Used to input an audio signal for normal recording.

❷ AUDIO IN(input) Hi-Fi CH-1/L(channel-1/left) and CH-2/R(channel-2/right) connectors (phono jacks)

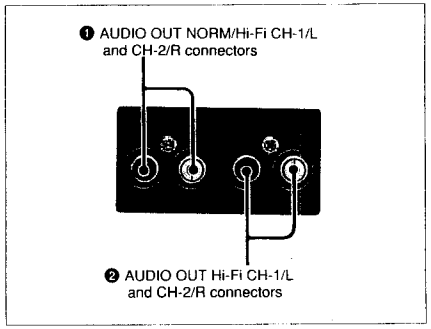
Used to input an audio signal for hi-fi recording.

2 VIDEO IN(input) connectors (BNC type) and 75 Ω termination switch
Used to input a composite video signal. Bridge connection is allowed. To set a bridge connection, set the 75 Ω termination switch to OFF. For the last unit of a bridge connection or for no bridge connection, set the 75 Ω termination switch to ON.

3 S VIDEO IN(input) connector (4-pin mini DIN)
To input the Y and C signals separately.

4 SYNC IN(synchronizing signal input) connector (BNC type)
Used to input an external synchronizing signal.

5 AUDIO OUT(output) connectors



AUDIO OUT connectors

❶ AUDIO OUT(output) NORM/Hi-Fi CH-1/L(channel 1/left) and CH-2/R(channel 2/right) connectors (phono jacks)
Used to output the hi-fi recording or normal recording audio output signals, selected with the AUDIO LINE OUT SELECT switch on the sub panel.

❷ AUDIO OUT(output) Hi-Fi CH-1/L(channel 1/left) and CH-2/R(channel 2/right) connectors (phono jacks)
Used to output the hi-fi recording audio output signal.

6 Optional accessory compartment (1)
This compartment is used to install the SVBK-100 or SVBK-120.

Note
Nothing can be installed here when optional accessory compartment (2) 7 is being used.

7 Optional accessory compartment (2)
This compartment is used to install the SVBK-130 or SVBK-140.

Note
Nothing can be installed here when optional accessory compartment (1) 6 is being used.

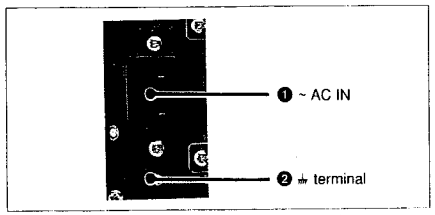
8 AUDIO MONITOR output connector (phono jack)
Used to output the audio signal selected with the MONITOR OUT CH-1/MIX/CH-2 selector on the front panel.

9 TV OUT (output) connector (8-pin)
Used to output the video and audio signal to a video monitor having an 8-pin VTR connector. The audio signal recorded onto the channel selected with the MONITOR OUT selector is output.

10 S VIDEO OUT (output) connector (4-pin mini DIN)
Used to output the Y and C signals separately.

11 VIDEO OUT (output) connector (BNC type)
Used to output a composite video signal.

12 AC IN(input) connector and ground terminal



AC IN connector and ground terminal

❶ ~ AC IN: Used to connect the VTR to an AC power outlet with the supplied AC power cord.
❷ ⏚ (ground) terminal: Used to connect a ground line.

Chapter 3
Before Using Your SVO-9620

This chapter explains how to set up the VTR. You should be familiar with the contents of this chapter before attempting to operate the VTR.

Precautions ..... **3-3(E)**
Safety Precautions ..... 3-3(E)
Handling Precautions ..... 3-3(E)
Connections ..... **3-5(E)**
Connecting Other Video Equipment ..... 3-5(E)
Controlling the VTR with a Remote Control Unit ..... 3-7(E)
Handling Cassettes ..... **3-8(E)**
Compatible Cassetttes ..... 3-8(E)
Preventing Accidental Erasure ..... 3-9(E)
Notes on Handling and Storing Cassettes. ..... 3-10(E)
Inserting a Cassette ..... 3-10(E)
Ejecting a Cassette ..... 3-11(E)

Precautions

Safety Precautions

Power supply
- Connect the VTR to a 220 to 240 V AC power outlet.
- Do not drop or place heavy objects on the power cord. If the power cord is damaged, turn off the power immediately. It is dangerous to use the VTR with a damaged power cord.
- Disconnect the power cord from the AC outlet by grasping the plug, not by pulling the cord.

Do not open the cabinet
Opening the cabinet may damage precision components or result in electric shock.

Keep foreign objects out of the cabinet
Dropping flammable or metal objects into the cabinet, or spilling liquids near the VTR can result in serious accidents.

In case of trouble
If you notice an unusual sound, smell or smoke, turn off the power immediately, disconnect the power supply and contact your Sony dealer.

Handling Precautions

Location
Do not store or use the VTR under any of the following conditions:
- In excessive heat or cold (permissible temperature range: 5°C to 40°C (41°F to 104°F))
- In direct sunlight or near heaters. Remember that the temperature inside a locked automobile in summer can rise as high as 50°C (122°F).
- In damp or dusty locations
- In locations subject to vibration
- Near strong magnetic fields
- Near televisions or equipment generating strong radio frequency energy

Orientation
The VTR is designed to be operated horizontally. Never operate the VTR vertically or incline it more than 20 degrees.

Protect the VTR from impact
Do not drop the VTR or subject it to severe shocks.

Keep the VTR well ventilated
To prevent the temperature from rising inside the VTR, keep the VTR uncovered and well ventilated while it is operating.

Precautions (Continued)

Maintenance

Clean the cabinet and panels by wiping with a soft, dry cloth.
For stubborn stains, moisten the cloth with a small amount of neutral solvent, and finish by wiping with a dry cloth. Do not use alcohol, benzine, thinners or volatile liquids, as these may discolor or damage the cabinet surface.

Transporting

- Remove any cassette from the cassette compartment.
- Protect the VTR from impact by transporting it in its original carton or a protective case.

Moisture condensation

When the VTR is moved directly from a cold place to a warm place, or when the VTR is operated in a location having a high humidity, moisture may condense inside the VTR. If the tape is used under this condition, it may adhere to the head drum or the tape guide, causing damage. To prevent this, the VTR is equipped with a moisture detector. The AUTO OFF lamp lights to indicate that moisture has been detected inside the VTR. When this lamp is lit, cassettes are automatically ejected. If a cassette is inserted, the VTR does not function, even if a function button is pressed.

Note

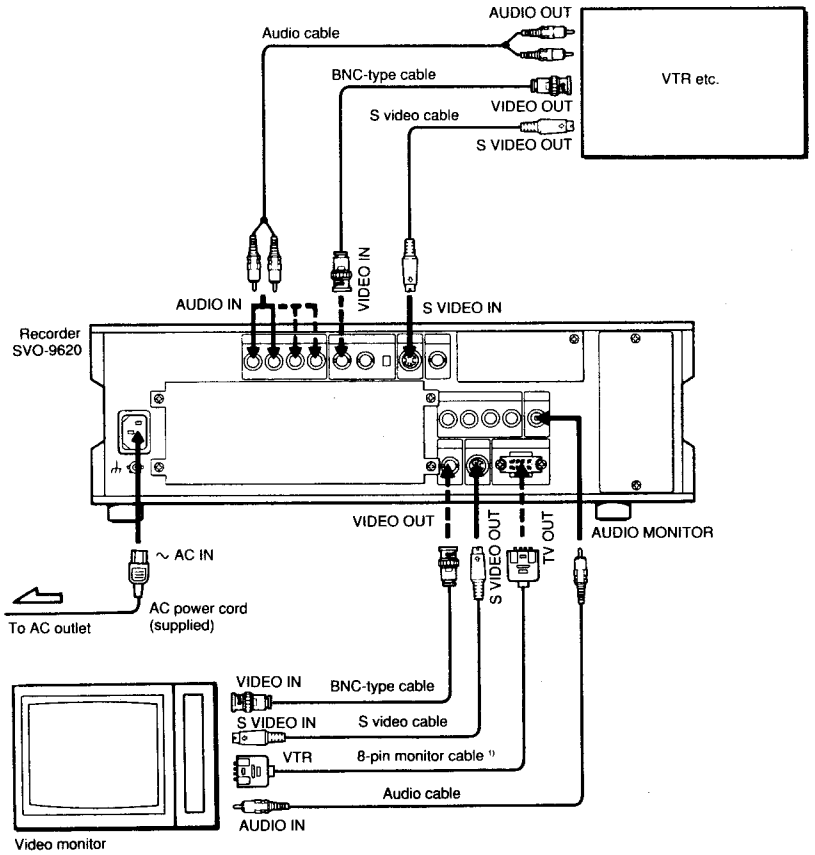
When the VTR is first moved to a location where condensation is liable to form, we recommend that you wait for about ten minutes for the VTR to warm up and keep the power on so that the moisture detector will operate.

Connections

The following examples illustrate how to connect equipment using this VTR.
- Connecting other video equipment
- Controlling the VTR with a remote control unit

Connecting Other Video Equipment

The following example shows how to make the necessary connections to record video signals output from other video equipment.



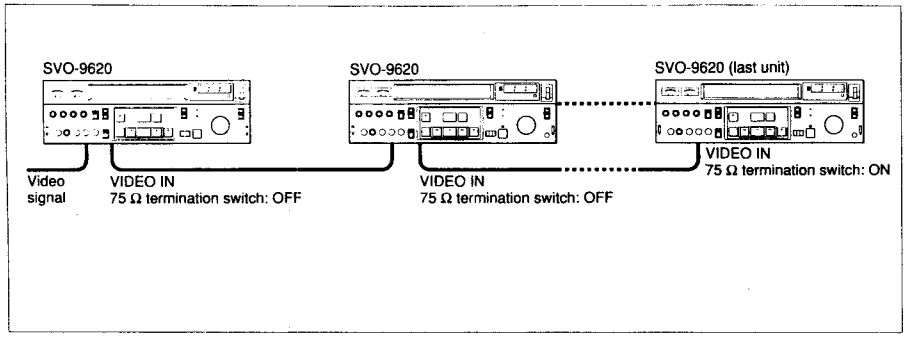
1) You can input both audio signals and video signals through the single TV OUT connector. Hence, you don't need to use a separate S cable, BNC-type cable, and audio cable.

Connecting other video equipment

1-15

Simultaneous recording on two or more SVO-9620 VTRs

Connect the VIDEO IN connectors of each VTR to each other.
The VTR that is used as the bridge termination unit must have its 75 Ω termination switch set to ON.

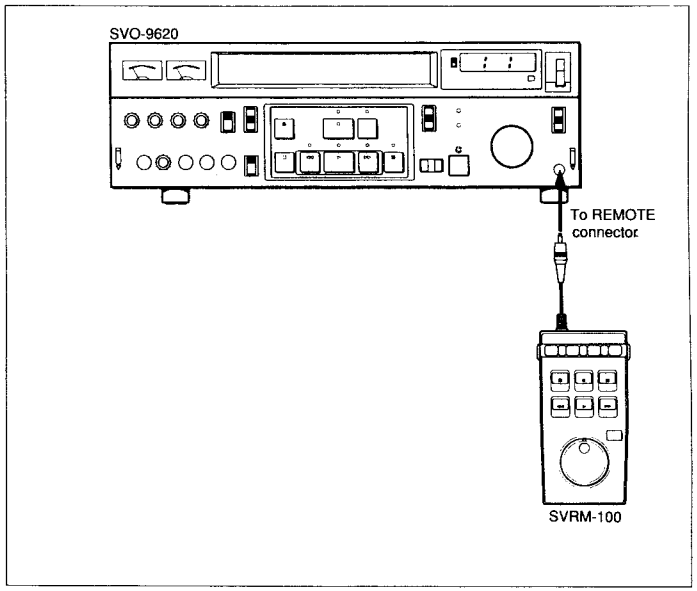


Bridge connection

Controlling the VTR with a Remote Control Unit

The connections necessary to enable remote control of the VTR with the SVRM-100 remote control unit are as follows. The SVRM-100 can be used to control the VTR to which it is connected. But, the following buttons of SVRM-100 do not function.

- FREEZE button
- INDEX button
- MARK button
- ERASE button



Controlling the VTR with a remote control unit

Handling Cassettes

Compatible Cassettes

Use S-VHS or VHS tapes with the VTR. If you use VHS tape, you cannot record a video signal in S-VHS format. In this case, the VTR records and plays back in VHS format on the VHS tape. The type numbers and recording/playback times of the cassettes that can be used with this VTR are listed in the following chart.

S-VHS tape

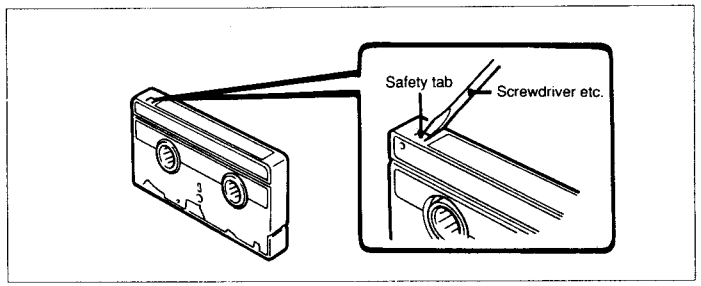
Type number	Recording/playback time (minutes)
MQSE-30	30
MQSE-60	60
MQSE-120	120

VHS tape (High-Grade type)

Type number	Recording/playback time (minutes)
E-30PM	30
E-60PM	60
E-120PM	120

Preventing Accidental Erasure

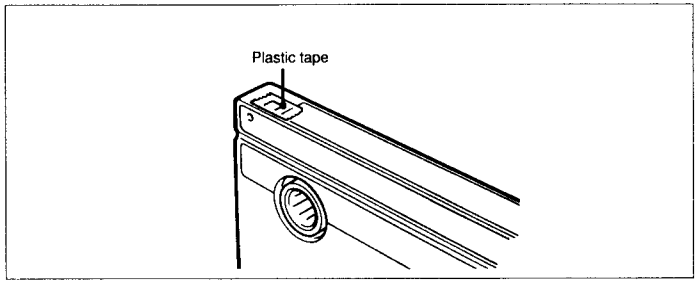
When re-recording on a previously recorded tape, previous recording is automatically erased. To avoid unintentional erasure of recorded signals, break off the safety tab on the cassette. With the tab removed, recording is inhibited.



Preventing accidental erasure

To cancel recording inhibition

Cover the slot left by the safety tab with plastic tape.



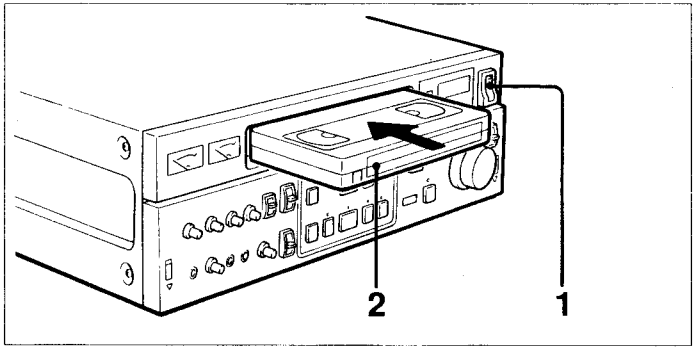
Canceling recording inhibition

1-17

Notes on Handling and Storing Cassettes

- Do not store cassettes in locations subject to direct sunlight, high humidity or excessive dust, or near heat sources, air ducts or in magnetic fields.
- After use, rewind the tape onto the supply reel to avoid damage to the tape.
- Store the cassette in its case and keep it vertical position.
- Do not drop a cassette and avoid subjecting it to mechanical shock.

Inserting a Cassette



Inserting a cassette

1 Turn the power on.

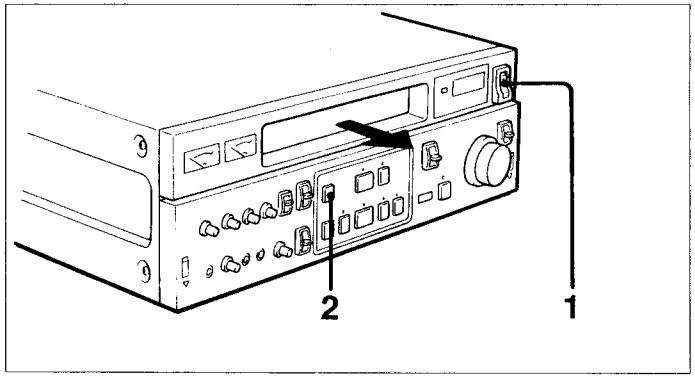
2 Fully insert the cassette into the cassette compartment.

The cassette is automatically pulled into the operating position.

Notes

- Insert the cassette straight into the entrance of the compartment.
- Insert the cassette with its label side up.
- The labels on the cassette should be firmly attached. If they become detached inside the VTR, you may not be able to eject the cassette.

Ejecting a Cassette



Ejecting a cassette

1 Make sure that the power is turned on.

2 Press the EJECT button.

Caution

Do not attempt to eject a cassette while your fingers are in the cassette compartment.

Chapter 4
Recording

This chapter explains recording, how to dub audio signals, timer recording and sensor recording (where the VTR automatically starts recording a signal from a satellite system).

Pre-recording Preparation ..... **4-3(E)**
Selecting the Audio Recording System ..... 4-3(E)
Setting the Operation Mode at Tape End ..... 4-7(E)
Recording ..... **4-8(E)**
Monitoring the Sound being Recorded ..... **4-11(E)**
Dubbing Audio Signal ..... **4-12(E)**
Timer Recording ..... **4-15(E)**
Sensor Recording ..... **4-17(E)**

Pre-recording Preparation

This section explains the necessary preparation prior to recording.

Selecting the Audio Recording System

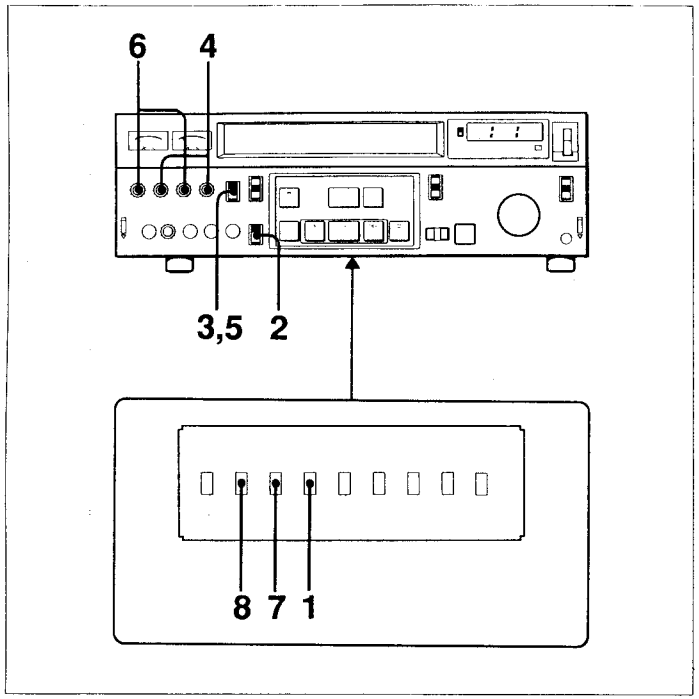
Three audio recording systems are supported for the audio signal input through the AUDIO IN connectors on the rear panel.

- Hi-fi recording: records an input audio signal onto the video track after frequency modulation . This type of recording enables the recording of a wide dynamic range, compared with normal recording.
- Normal recording: records an input audio signal onto the audio track. This type of recording is suitable for recording with a microphone.
- Four-channel recording: records an input audio signal in both the hi-fi and normal recording systems onto each track simultaneously. This type of recording enables the simultaneous recording of four audio signals.

Recording system	Signal to be recorded	Track to be recorded
Hi-fi recording	Signal from the AUDIO IN Hi-Fi connectors	Onto the video track
Normal recording	Signal from the AUDIO IN NORM connectors or the MICROPHONES connector	Onto the audio track
Four-channel recording	Signals from the AUDIO IN Hi-Fi connectors and the AUDIO IN NORM connectors	Onto the video track and audio track

Four-channel recording

To record an audio signal input from the AUDIO IN Hi-Fi connectors using the hi-fi recording system, and simultaneously record an input audio signal from the AUDIO IN NORM connectors in normal recording mode, perform the following steps.



Four-channel recording

1 Set the HiFi REC switch on the sub panel to ON.

2 Set the CH-2 METER switch to AUDIO.

3 Set the MONITOR OUT METER selector to Hi-Fi.

4 Adjust the audio input signal level with the AUDIO LEVEL Hi-Fi controls, while monitoring the AUDIO LEVEL meter.

5 Set the MONITOR OUT METER selector to NORM.

6 Adjust the audio input signal level with the AUDIO LEVEL NORM controls, while monitoring the AUDIO LEVEL meter.

7 If you want to prevent the distortion caused by excessive input when the VTR is recording an audio signal in normal recording mode, set the LIMITER switch to ON.
ON: The limiter circuit is activated, and excessive input signal levels are limited. Such cases could include sudden loud noises when recording with a microphone.
OFF: The limiter circuit is deactivated.

8 To record an audio signal in normal recording mode with the Dolby NR system, set the DOLBY switch on the sub panel to ON.
ON: Sound is recorded with the Dolby NR system.
OFF: Sound is recorded without the Dolby NR system.

Note

Be sure to make the same setting for both recording and playback.

Hi-fi recording operation

To record an audio signal input through the AUDIO IN Hi-Fi connectors on the rear panel in hi-fi recording mode, perform steps 1 to 4 of the procedure explained under "Four-channel recording."

Note

When you need to record in hi-fi recording mode only, do not connect any source to the AUDIO IN NORM connectors on the rear panel. Otherwise, the audio input signal from the AUDIO IN NORM connectors will also be recorded in normal recording mode.

Normal recording operation

To record an audio signal input through the AUDIO IN NORM connectors on the rear panel in normal recording mode, turn the HiFi REC switch on the rear panel to OFF, then perform steps 2 and 5 to 8 of the procedure explained under "Four-channel recording."

You may also record the audio signal input through the MICROPHONES connectors.

To record an audio signal input from a the microphone

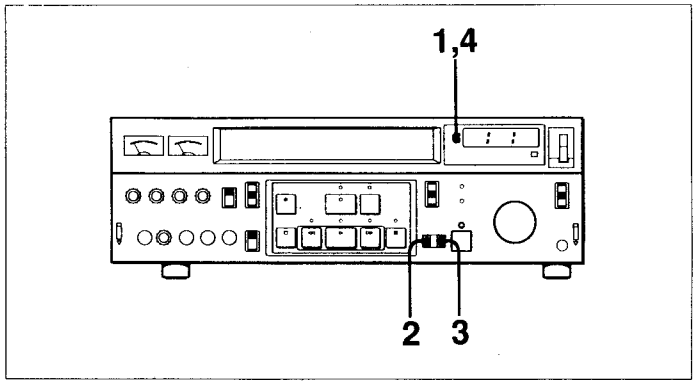
Connecting a microphone to the MICROPHONES connectors on the front panel allows the VTR to record the audio signal input from the microphone. The signal is recorded onto the tracks for both normal and hi-fi audio channel-1 when a microphone is connected to MICROPHONE CH-1. The signal is recorded onto the tracks for both normal and hi-fi audio channel-2 when a microphone is connected to MICROPHONE CH-2. You may also record the signal onto both tracks by connecting a microphone to both connectors. If you connect microphones to the MICROPHONES connectors, any signal being input through the AUDIO IN NORM connectors is not recorded by the VTR.

Setting the Operation Mode at Tape End

This VTR rewinds to the beginning of the tape once the tape has reached its end. This is the factory default setting. You can modify this setting to eject the cassette or simply stop the tape at the tape end. Change the setting as follows.

Note

During timer recording and sensor recording, the VTR does not automatically rewind at tape end even if set to do so.



Setting the operation mode at tape end

1 Set the CTL/MENU switch to MENU.

The menu items that can be set appear in the time counter block.

2 Press the ITEM button repeatedly until "tPE-**" appears.

3 Press the DATA button repeatedly to select the operation mode at tape end.
rE: Automatically rewinds the tape at tape end.
St: Automatically stops the tape at tape end.
Et: Automatically ejects the cassette at tape end.

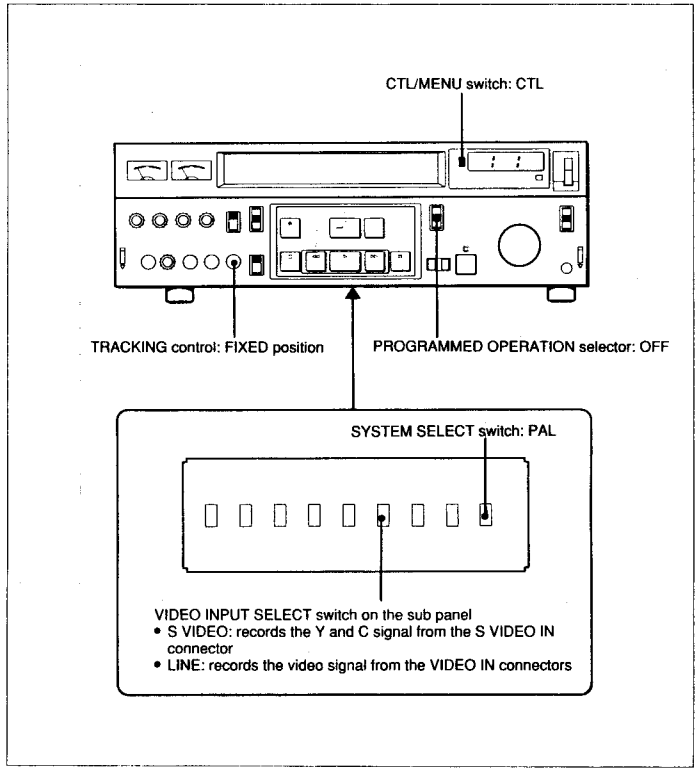
4 Set the CTL/MENU switch to CTL.

The menu item displayed in step 3 is specified.

Recording

Preparation

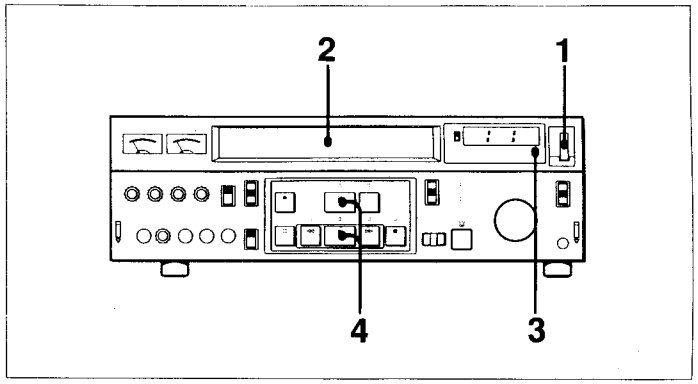
Prior to recording, set the selector, control, and switch as follows.


CTL/MENU switch: CTL
TRACKING control: FIXED position
PROGRAMMED OPERATION selector: OFF
SYSTEM SELECT switch: PAL
VIDEO INPUT SELECT switch on the sub panel
• S VIDEO: records the Y and C signal from the S VIDEO IN connector
• LINE: records the video signal from the VIDEO IN connectors

Setting the selector, control and switch

Recording

Before inserting a cassette into the cassette compartment, check that the safety tab on the cassette is present. If the tab is not present, recording will be inhibited.



Recording operation

1 Set the POWER switch to ON.

2 Insert the cassette into the cassette compartment.

3 Press the RESET button.

The time counter indicates "0:00:00."

4 Press the PLAY button while holding down the REC button.

Recording begins.

To stop the tape momentarily

Press the PAUSE button.
To resume recording, press the PAUSE button again. You can continue recording smoothly.

This VTR's flying erase head allows a recording to be made immediately after another recording without picture disturbance. Thus, when editing with another VTR, use this VTR for recording and the other VTR for playback.

Notes

- The VTR uses the assemble recording method to record video signals. Assemble recording allows a sequence to be recorded immediately after a previous recording, with no picture disturbance. Some break-up may be noticed at the end point, however.
- The picture may break up at the beginning of the recording when recording onto a previously recorded tape without framing.
- If the pause mode is held for a period greater than the time set with the menu, the VTR automatically enters long pause mode (the tape around the head drum automatically slackens to protect the video head and the tape). Press the pause button again to release long pause mode.
  You can change the long pause time with a menu operation. For details, refer to "Setting the still time" on page 5-5(E).

To stop recording

Press the STOP button.

Note

The built-in AGC circuit automatically adjusts the recording level to the optimum value.

Monitoring the Sound being Recorded

You can monitor the sound being recorded. The sound is output from the HEADPHONES connector, AUDIO MONITOR connector, and TV OUT connectors. Select the sound to be monitored with the MONITOR OUT METER switch and CH-1/MIX/CH-2 selector.

Note

You can not select the signal output from the AUDIO OUT connector by using this switch and selector.

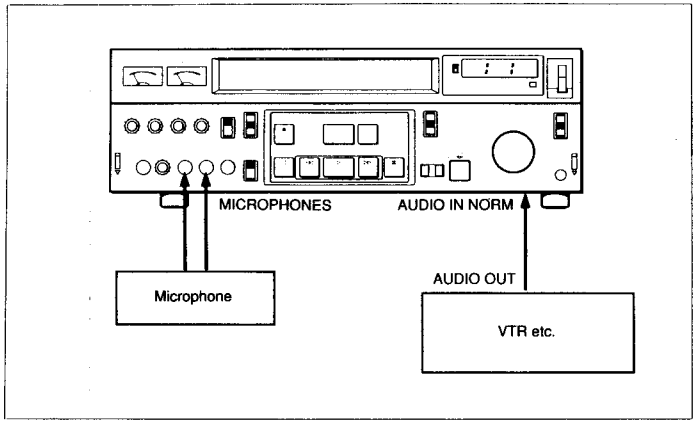
Sound to be monitored	Channel to be monitored	MONITOR OUT METER switch setting	CH-1/MIX/CH-2 selector setting
Hi-fi recording sound	Channel-1	Hi-Fi	CH-1
	Channel-1 and channel-2		MIX
	Channel-2		CH-2
Normal recording sound	Channel-1	NORM	CH-1
	Channel-1 and channel-2		MIX
	Channel-2		CH-2

Dubbing Audio Signal

You can dub audio signals onto a previously recorded tape. The audio signal is recorded onto the track used for normal recording. You can select which channel is to be recorded: channel-1, channel-2, or channel-1 and channel-2.
For details, refer to "Menu items and their functions" on page A-3(E).

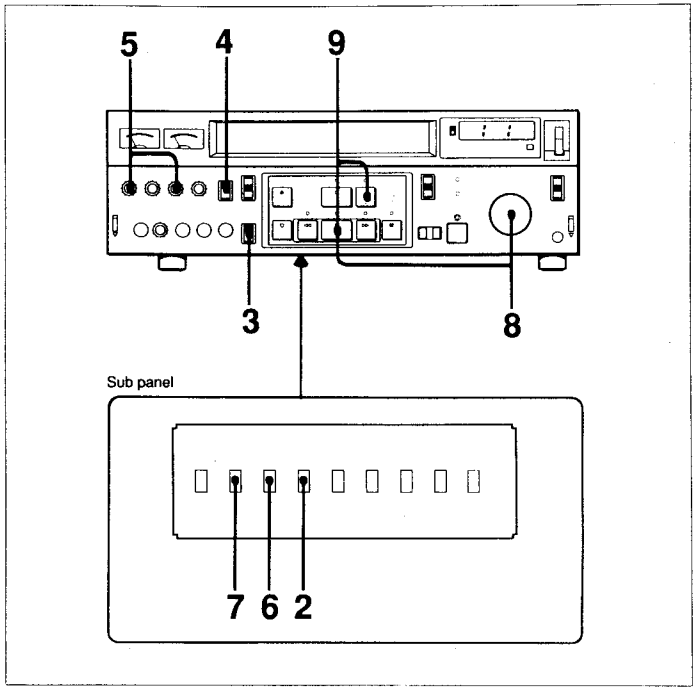
Connection for audio signal dubbing

Input the audio signal to be dubbed through the MICROPHONES connector on the front panel or through the AUDIO IN NORM connector on the rear panel. If a signal is input through both connectors, the signal input through the MICROPHONES CH-1 connector is recorded.



Connection for audio signal dubbing

To dub an audio signal



Audio signal dubbing

1 Select the channel for the dub audio signal.
For details, see "dub" under "Menu items and their functions" on page A-3(E).

2 Set the HiFi REC switch on the sub panel to OFF.

3 Set the CH-2 METER switch to AUDIO.

4 Set the MONITOR OUT METER switch to NORM.

5 Adjust the audio dubbing signal level with the AUDIO LEVEL NORM controls while monitoring the AUDIO LEVEL meter.

6 To prevent the distortion caused by excessive input, set the LIMITER switch on the rear panel to ON.
ON: The limiter circuit is activated.
OFF: The limiter circuit is deactivated.

7 To record a signal with the Dolby NR system, set the DOLBY switch on the sub panel.
ON: Record the audio signal with the Dolby NR system.
OFF: Record the audio signal without the Dolby NR system.

Note

Be sure to set to make the same setting for both dubbing and playback.

8 Locate the point from which you want to start dubbing with the PLAY button or shuttle dial *(See page 5-11(E))*.

9 Press the PLAY button while holding down the DUB button.

Audio signal dubbing will start.

To stop the tape momentarily

Press the PAUSE button.
To resume dubbing, press the PAUSE button again.

To stop dubbing

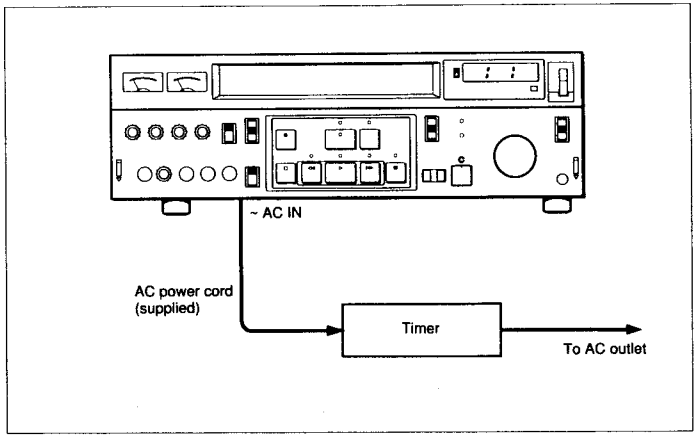
Press the STOP button.

Timer Recording

Using an optional timer, you can automatically start recording at a preset time.

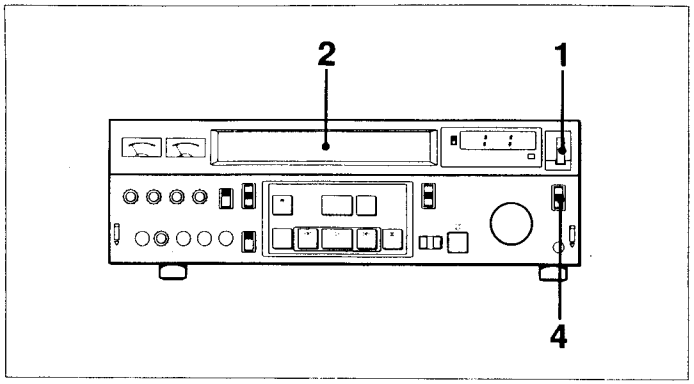
Connecting a timer

Connect a timer to the VTR as follows.



Connecting a timer

Timer recording



Timer recording

1 Set the POWER switch of the VTR to ON.

2 Check that the safety tab on the cassette is present, and insert the cassette into the cassette compartment.

3 Set the times at which you want to start and stop recording.
For details, refer to the operation manual supplied with the timer.

4 Set the TIMER switch to REC.

The timer automatically turns on the VTR power at the preset time. The VTR starts recording.

To stop timer recording

Press the STOP button of the VTR.

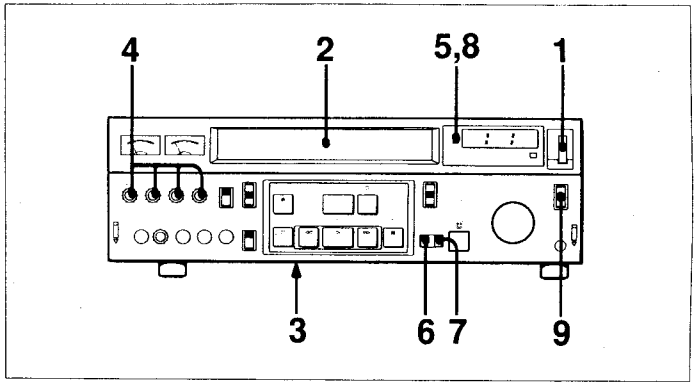
Notes

- To ensure that all of the desired sequence is recorded, set the start time one minute earlier than the time at which you actually want to start recording.
- Once the TIMER switch has been set to REC, all buttons and switches, except for the STOP button, are disabled. Also, immediately after the power is turned on, the STOP button is temporarily disabled.
- After timer recording has been completed, set the TIMER switch to OFF.
- At tape end, the VTR automatically enters the operating mode set with the menu. *For details, refer to "Menu items and their functions" on page A-3(E).*
- At the recording stop time, the timer turns off the VTR power with the tape wound around the head drum. At the next recording start time, the timer automatically turns on the power of the VTR. At this time, the tape stops momentarily, then timer recording starts.

Sensor Recording

By setting from the menu, the VTR can automatically records signals whenever a video signal is input through the VIDEO IN or S VIDEO IN connectors. You can thus automatically record signals, for example, from satellite system.

Sensor recording operation



Sensor recording operation

1 Set the POWER switch of the VTR to ON.

2 Check that the safety tab on the cassette is present, then insert the cassette into the cassette compartment.

3 Select the video signal to be recorded with the VIDEO INPUT SELECT switch on the sub panel.
S-VIDEO: records the Y and C signal input throuth the S VIDEO IN connector.
LINE: records the video signal input through the VIDEO IN connector.

4 Select the audio recording signal and adjust the signal level with AUDIO LEVEL controls.
For details, refer to " Selecting the Audio Recording System" on page 4-3(E).

5 Set the CTL/MENU switch to MENU.
The menu items appear on the time counter block.

6 Press the ITEM button repeatedly until "SEn-**" appears.

7 Press the DATA button repeatedly until "SEn-On" appears.

8 Set the CTL/MENU switch to CTL.

9 Set the TIMER switch to REC.

The SENSOR REC lamp on the indicator block will light and the VTR automatically enters standby mode for sensor recording.
When a video signal is input through the rear panel connectors set in step 3, the VTR automatically starts recording.
When the video signal is no longer input, the VTR automatically stops recording and returns to the standby mode for sensor recording. The SENSOR REC lamp on the indicator block remains lit.

To stop sensor recording

Press the STOP button.

Notes

- During sensor recording all the tape transport controls, except the STOP button, are disabled. Also, immediately after the power is turned on, the STOP button is temporarily disabled.
- After sensor recording has been completed, set the TIMER switch to OFF.
- At the tape end, the VTR automatically enters the operating mode set with the menu. For example, if "tPE-Et" has been set, the VTR automatically ejects the cassette at tape end.
- The VTR cannot enter the sensor recording mode and the SENSOR REC lamp flashes in the following cases:
  - When no cassette is inserted
  - When you insert a cassette from which the safety tab has been removed
  - When you insert a cassette in which the tape is already at tape end

Chapter 5
Playback

This chapter explains playback, how to locate a desired point, how to repeat playback of a portion, and timer playback.

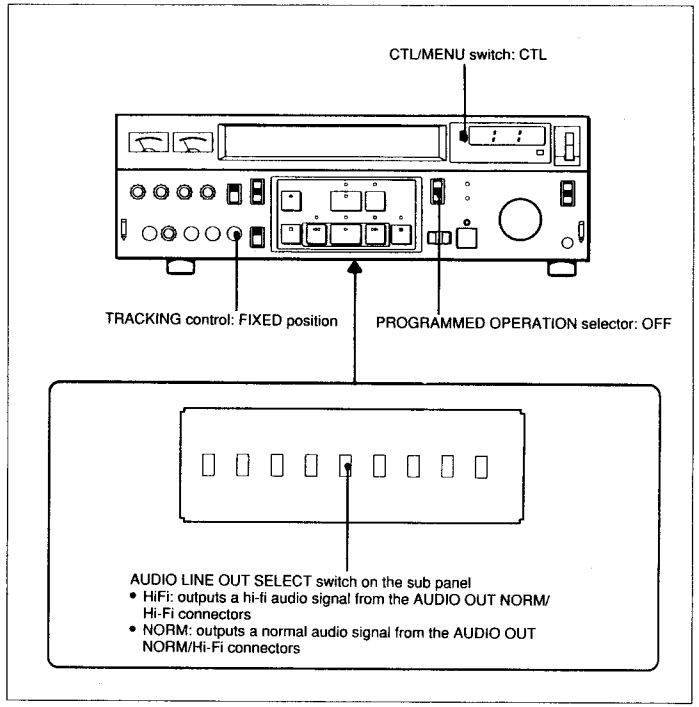
Pre-playback Preparation ..... **5-3(E)**
Pre-playback Setting ..... 5-3(E)
Setting the Still Time ..... 5-5(E)
Playback ..... **5-6(E)**
Repeated Playback of a Desired Portion ..... **5-8(E)**
Locating a Desired Point ..... **5-11(E)**
Timer Playback ..... **5-14(E)**

Pre-playback Preparation

Pre-playback Setting

Checking the switch settings

To prepare for playback, set the selector, control, and switch as follows.


CTL/MENU switch: CTL
TRACKING control: FIXED position
PROGRAMMED OPERATION selector: OFF
AUDIO LINE OUT SELECT switch on the sub panel
• HiFi: outputs a hi-fi audio signal from the AUDIO OUT NORM/ Hi-Fi connectors
• NORM: outputs a normal audio signal from the AUDIO OUT NORM/Hi-Fi connectors

Setting the selector, control and switch

Selecting the audio signal to be monitored

You can monitor the sound. The sound is output from the HEADPHONES connector, AUDIO MONITOR connector, and TV OUT connector. Select the sound to be monitored with the MONITOR OUT METER switch and the CH-1/MIX/CH-2 selector. If you set the CH-1/MIX/CH-2 selector to MIX, stereo sound is output from the HEADPHONES connector and mixed sound for channel-1 and channel-2 is output from AUDIO MONITOR connector.

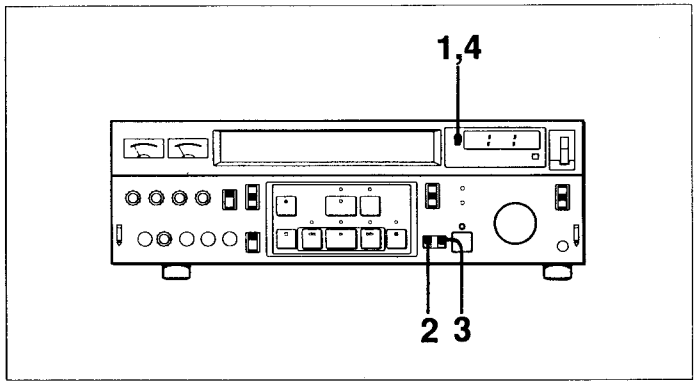
Note

You can not select which signal is output from the AUDIO OUT connector.

Sound to be monitored	Channel to be monitored	MONITOR OUT METER switch setting	CH-1/MIX/CH-2 selector setting
Hi-fi recording sound	Channel-1	Hi-Fi	CH-1
	Channel-1 and channel-2		MIX
	Channel-2		CH-2
Normal recording sound	Channel-1	NORM	CH-1
	Channel-1 and channel-2		MIX
	Channel-2		CH-2

Setting the Still Time

If the pause mode is held for more than about 5 minutes, the tape around the head drum automatically slackens to protect the video head and the tape (factory setting). This is called "long pause mode." You can set the still time from the menu. Change the time as follows.



Setting the still time

1 Set the CTL/MENU switch to MENU.

The settable menu items appear on the time counter block.

2 Press the ITEM button repeatedly until "Stt-**" appears.

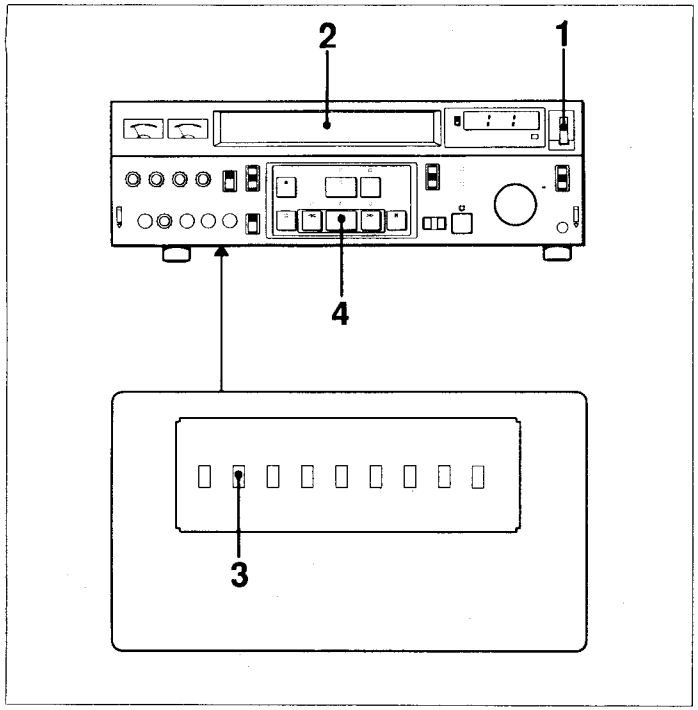
3 Press the DATA button repeatedly to display the desired still time.

Display	Still time
Stt-5	5 minutes
Stt-1	1 minute
Stt-10	10 seconds
Stt- 2	2 seconds

4 Set the CTL/MENU switch to CTL.

The long pause time item displayed in step 3 is set.

Playback



Playback

1 Set the POWER switch to ON.

2 Insert a cassette into the cassette compartment.

3 To play back the audio signal that has been recorded on the audio track using the Dolby NR system, set the DOLBY switch on the sub panel.
ON: plays back the audio signal with the Dolby NR system.
OFF: plays back the audio signal without the Dolby NR system.

4 Press the PLAY button.

The VTR starts playing back.
At tape end, the VTR automatically rewinds the tape then stops.

To stop the tape momentarily

Press the PAUSE button.
The tape stops and the video monitor displays a still picture.
To resume playback, press the PAUSE button again.

Note

If the tape is paused for longer than the time set from the menu, the still picture disappears from the monitor and the VTR enters long pause mode. To release long pause mode, press the PAUSE button again. The VTR immediately resumes playback.

To stop playback

Press the STOP button.

If snow or streaks appear on the picture

If the VTR is used to play back a signal recorded with another VTR, noise, snow or streaks may appear because of a tracking error. To overcome this, set the CH-2 METER switch to TRACKING, and slowly turn the TRACKING control until the maximum level, as indicated by the CH-2/TRACKING level meter, is obtained.

Note

After playing back this tape, reset the TRACKING control to FIXED.

To play back signals recorded in the NTSC color system

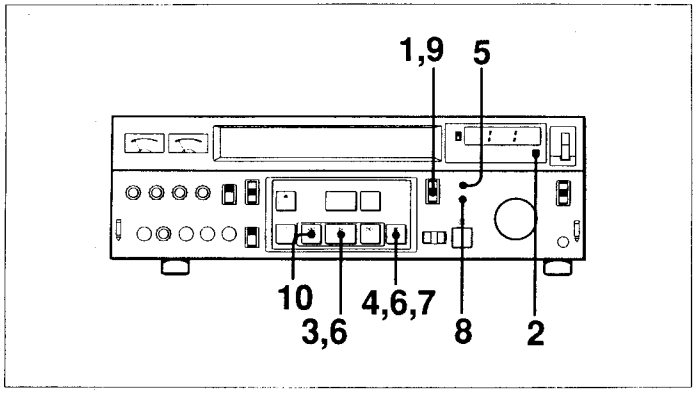
Set the SYSTEM SELECT switch on the sub panel to NTSC 4.43.
The NTSC-recorded signals are played back based on the NTSC 4.43 system.
To monitor the signal, use a monitor which can display signals of multiple color systems.

Repeated Playback of a Desired Portion

You can repeatedly play back a desired portion using the MARK IN A and B buttons and the PROGRAMMED OPERATION selector.

Three types of repeat playback are supported:
- Repeat playback of a desired portion
- Repeat playback between the beginning of the tape and a particular point
- Repeat playback between a particular point and the tape end

Repeat playback of a desired portion



Repeat playback of a desired portion

1 Set the PROGRAMMED OPERATION selector to OFF.

2 Press the RESET button.

The memorized points are erased.

3 Press the PLAY button.

The VTR starts playing back.

To repeat the portion between the beginning of the tape and a particular point, go to step 7.

4 Press the PAUSE button at the point where you want playback to start. To locate the desired point precisely, use the shuttle dial.
For details, see " Locating a desired point" on page 5-11(E).

5 Press the MARK IN A button.

The VTR memorizes the repeat start point (point A).

6 Press the PLAY button or PAUSE button.

The tape restarts playback.

To repeat the portion between a particular point and the tape end, go to step 9.

7 Press the PAUSE button at the point where you want to playback to stop. To locate the desired point precisely, use the shuttle dial.
For details, see "Locating a desired point" on page 5-11(E).

8 Press the MARK IN B button.

The VTR memorizes the repeat stopping point (point B).

9 Set the PROGRAMMED OPERATION selector to ⮌.

10 Press the REW button.

The VTR rewinds the tape and starts repeat playback.

To stop repeat playback
Press the STOP button.

After finishing repeat playback
Reset the PROGRAMMED OPERATION selector to OFF.

To check memorized points A and B

1 Press the STOP button.

2 Set the PROGRAMMED OPERATION selector to ⮌.

3 Press the MARK IN A or MARK IN B button.

Each memorized point will appear on the time counter while the respective button is held down.

Repeated Playback of a Desired Portion (Continued)

To check the time between two particular points specified for repeat playback

1 Press the STOP button.

2 Set the PROGRAMMED OPERATION selector to ↻.

3 Press the MARK IN A and MARK IN B buttons simultaneously.

The time between the specified points will appear on the time counter while the buttons are held down.

Notes

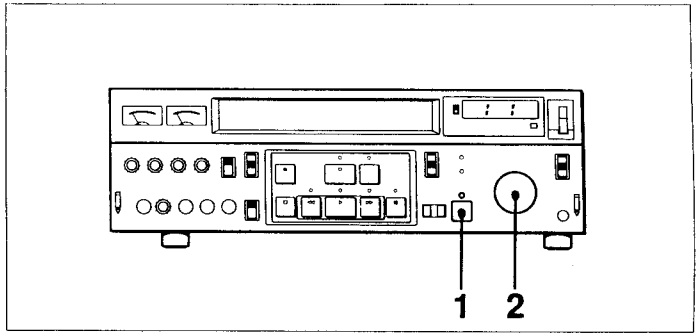
- When the RESET button is pressed while the PROGRAMMED OPERATION selector is set to OFF or ↻, data is erased from memory and "0:00:00" is set for both buttons.
- The most recently set values for the MARK IN A and B buttons, as well as the most recently set time counter value are maintained, even if the power is turned off. If, however, you perform a memorizing operation and turn off the power within 15 seconds of the power being turned on, the newly registered data will be lost.
- You can memorize only one point for each MARK IN A or B button. If the button is pressed several times, only the last point will be memorized.

Locating a Desired Point

There are two ways of locating a desired point:

- To locate a desired point using the shuttle dial
- To quickly return to a desired point

To locate a desired point using the shuttle dial



To locate a desired point using the shuttle dial

1 Press the SEARCH button.

The monitor displays a still picture.

2 Turn the shuttle dial:
FORWARD(clockwise): to play back in the normal direction.
REVERSE(counterclockwise): to play back in the reverse direction.

The playback speed can be varied between ±1/20 and ±10 times normal speed, according to the angle of rotation of the dial. The monitor displays a still picture while the dial is set to the center position.

To stop a search operation

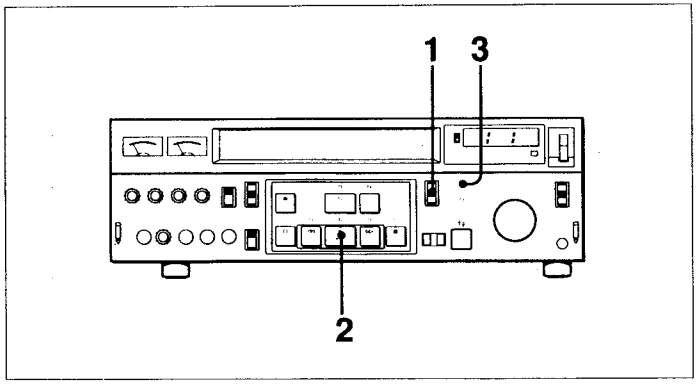
Press STOP or one of the other tape transport buttons.

To resume playback

Press the PLAY button.

To quickly return to a desired point

To memorize a desired point



To memorize a desired point

1 Set the PROGRAMMED OPERATION selector to OFF.

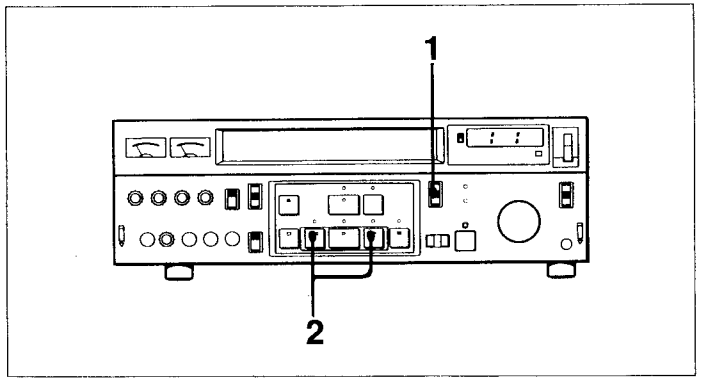
2 Press the PLAY button.

The VTR starts playing back.

3 Press the MARK IN A button at the point to which you want to rewind.

The VTR memorizes the point (point A).

To quickly return to a desired point



To quickly return to a desired point

1 Set the PROGRAMMED OPERATION selector to ⇢.

2 **When the desired point is prior to the current tape position,** press the REW button or turn the shuttle dial counterclockwise (REVERSE).
When the desired point is subsequent to the current tape position, turn the shuttle dial clockwise (FORWARD).

The VTR starts searching for the point memorized for the MARK IN A button.

To resume playback

Return the PROGRAMMED OPERATION selector to OFF.

To check the desired point

1 Press the STOP button.

2 Set the PROGRAMMED OPERATION selector to ⇢.

3 Press the MARK IN A button.

The memorized point appears on the time counter while the button is held down.

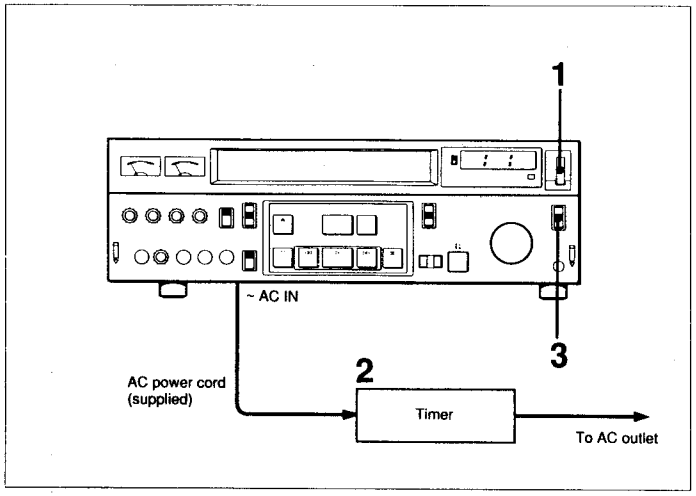
Notes

- If the button is pressed several times, only the last point will be memorized. When the RESET button is pressed with the PROGRAMMED OPERATION selector set to OFF or ⇢, all data is erased from memory and "0:00:00" is set for both buttons.
- The most recently set values for the MARK IN A and B buttons and the most recent time counter value are held in memory even if the power is turned off. If, however, you perform a memorizing operation and turn off the power within 15 seconds of the power being turned on, the newly registered data will be lost.
- You can memorize only one point for each MARK IN A or B button.

Timer Playback

Using an optional timer, you can automatically start playback at a preset time.

Timer playback



Timer playback

1 Set the POWER switch of the VTR to ON.

2 Set the playback start and stop times with the timer.
For details, refer to the operation manual provided with the timer.

3 Set the TIMER switch to PLAY.

The timer automatically turns on the VTR power at the playback start time.

To stop playback during timer playback

Press the STOP button of the VTR.

Notes

- The VTR automatically rewinds the tape then stops. If, however, you set repeat playback between a particular point and the tape end, the VTR automatically rewinds the tape, enters repeat playback mode and starts playback repeatedly upon reaching the tape end.
- When the playback stop time is reached, the timer turns off the VTR power with the tape wound around the head drum. At the next playback start time, the timer again automatically turns on the VTR power. The tape stops momentarily, then timer playback starts.

Chapter 6
Maintenance

This chapter explains troubleshooting, error messages and their meanings, and cleaning the video heads.

Troubleshooting.....**6-3(E)**
Error Messages and Their Meanings.....**6-4(E)**
Cleaning the Video Heads.....**6-5(E)**

Troubleshooting

Should you have a problem with your VTR, first check the three items in Check list 1 and then the appropriate items from Check list 2 or Check list 3.

CHECK LIST 1

- Check that the AC power cord is firmly connected. *(See page 2-12(E).)*
- Check that the POWER switch is set to ON. *(See page 2-5(E).)*
- Check the connections. *(See pages 3-5(E) to 3-7(E).)*

CHECK LIST 2

Symptoms	Possible causes and corrective actions	Reference page
AUTO OFF lamp lights and function buttons do not function.	Moisture has condensed inside the VTR. Keep the power on and wait until the lamp goes off. (This indicates that the moisture has evaporated.)	3-4(E)
The tape stops suddenly and no operation button functions.	Eject the cassette and take up the leader tape manually.	3-11(E)
The cassette cannot be ejected.	Turn off the VTR and consult your Sony dealer.	3-11(E)

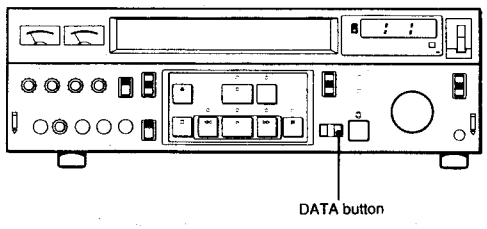
CHECK LIST 3

Symptoms	Possible causes and corrective actions	Reference page
A cassette cannot be inserted.	Insert the cassette correctly. Check whether another cassette has already been inserted. Check whether the AUTO OFF lamp is lit.	3-10(E)
The tape transport does not operate when any of the operation buttons is pressed. Recording cannot be performed.	Check that the REC lamp is lit. Check that the safety tab of the cassette is present. Check that the PROGRAMMED OPERATION selector is set to OFF.	3-9(E)
Snow or streaks appear on the playback picture.	Set the TRACKING control to the FIXED position. Clean the video head. Check that the EDIT switch is set to OFF.	2-4(E) 2-10(E) 6-5(E)
The playback picture does not appear.	Check that the setting of the SYSTEM SELECT switch is correct. Check that the video monitor conforms to the color system of the tape being played back.	2-10(E)

Error Messages and Their Meanings

1-36

The SVO-9620 features self-diagnostics. When a problem is detected, an error message appears in the time counter block on the front panel. The error messages that may appear are explained.



Note

If an error message appears, turn off the power and contact your Sony dealer.

Error code	Sub error code	Meaning
Err-01	—	Reel motor clockwise rotation error
Err-02	—	Tape slack
Err-03	—	Capstan motor error
Err-04	—	Drum motor error
Err-05	06 07 09 0A	Abnormal reel rotation
Err-20	02 03 05 06 30	Loading error Unloading error Cassette compartment error Reel motor error Servo lock error
Err-22	—	Interface I/O error
Err-23	—	Tape transport error
Err-30	—	Sensor error
Err-31	—	Sensor error
Err-32	—	Sensor error
Err-90	01 02 00	Tape transport error

Cleaning the Video Heads

Cleaning the video heads

If the picture temporarily disappears or if snow or noise appears on the picture, the video heads may be contaminated and should be cleaned. Use the optional T-25CL cleaning cassette to perform cleaning as follows. *For details, refer to the operation manual supplied with the cleaning cassette.*

1 Remove the cassette being played.

2 Insert the cleaning cassette.

3 Press the PLAY button.

4 Let the cleaning cassette run for about 10 seconds. Then press the STOP button.

5 Press the EJECT button to remove the cleaning cassette.

Notes

- Remove the cleaning cassette immediately to prevent damage to the video head.
- Do not use the cleaning cassette for more than 10 seconds at a time. Excessive use of the cleaning cassette will shorten the life of the heads.
- Do not rewind the cleaning cassette every time it is used. Run the tape to its end, then rewind it.
- You can run through a cleaning cassette four or five times. If used more than five times, the cleaning effect will lessen.
- Do not use a commercially available wet type cleaning cassette. Wet cleaners may damage the video heads.

Replacing the video heads

If picture quality is still inadequate after cleaning, the video heads may require replacement. The life of the heads is approximately 500 to 1000 hours of use. With this VTR, the accumulated operation time of the heads can be checked as follows.

1 Set the PROGRAMMED OPERATION selector to ⟲.

2 Hold down the RESET button for about two seconds.

The total accumulated operation time of the head drum appears on the counter in units of hours.

Note

For head replacement, consult your Sony dealer.

Appendixes

Menu Items and Their Functions ..... A-3(E)
Specifications ..... A-5(E)
Glossary ..... A-9(E)

Menu Items and Their Functions

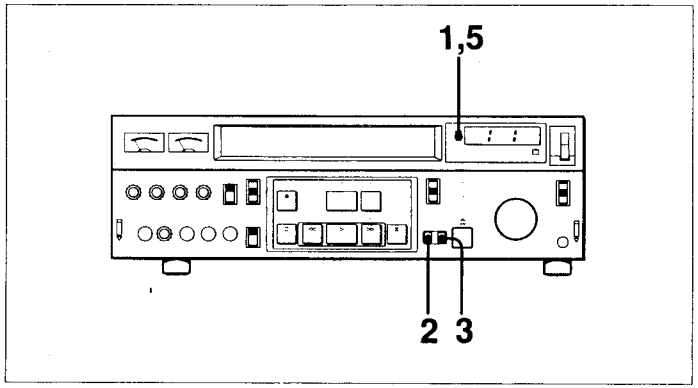
Summary of menu items and their functions

The VTR features the following nine menu items. The boxed numbers in the Display column are the factory settings.

Item	Display	Set data
Sensor recording ON/OFF	SEn [-ON] -OF	**On:** Sensor recording mode is possible. (Valid only when the TIMER switch is set to REC.) **OF:** Sensor recording mode is not possible.
Tape end operation mode	tPE [-rE] -St -Et	**rE:** Automatically rewinds the tape at tape end. (During timer recording or sensor recording, however, the tape is not rewound.) **St:** Automatically stops the tape at tape end. **Et:** Automatically ejects the cassette at tape end.
S-VHS recording selection	SvH [-At] -OF	**At:** Automatically sets S-VHS recording when an S-VHS tape is loaded, and VHS recording when a VHS tape is loaded. **OF:** Automatically sets VHS recording when eithr an S-VHS tape or VHS tape are inserted.
Channel selection for dubbing	dUb [-C1] -C2 -12	**C1:** To dub onto the channel-1 track for normal recording. **C2:** To dub onto the channel-2 track for normal recording. **12:** To dub onto the channel-1 and channel-2 tracks for normal recording.
Still time	Stt [-5] -1 -10 - 2	This item determines long pause mode time. **5:** 5 minutes **1:** 1 minute **10:** 10 seconds **2:** 2 seconds
Digital NR ON/OFF (Valid only when the SVBK-150 is installed in the SVO-9620)	dnr [-On] -OF	**On:** Activates the digital noise reducer. **OF:** Deactivates the digital noise reducer.
Digital CNR ON/OFF (Valid only when the SVBK-150 is installed in the SVO-9620, and the "dnr-On" setting is made.)	Cnr [-On] -OF	**On:** Activates the digital chroma noise reducer. **OF:** Deactivates the digital chroma noise reducer.
Digital YNR ON/OFF (Valid only when the SVBK-150 is installed in the SVO-9620, and the "dnr-On" setting is made.)	Ynr [-On] -OF	**On:** Activates the digital luminance noise reducer. **OF:** Deactivates the digital luminance noise reducer.

Setting menu operation

To change the operation mode of the VTR, use the menu as follows.



Setting menu operation

1 Set the CTL/MENU switch to MENU.

The items which can be set appear on the time counter block.

2 Press the ITEM button to select the item to be set.

3 Press the DATA button to set the data for the selected item.

4 Repeat steps 2 and 3 as necessary.

5 Set the CTL/MENU switch to CTL.

The data specified in steps 2 and 3 is set.

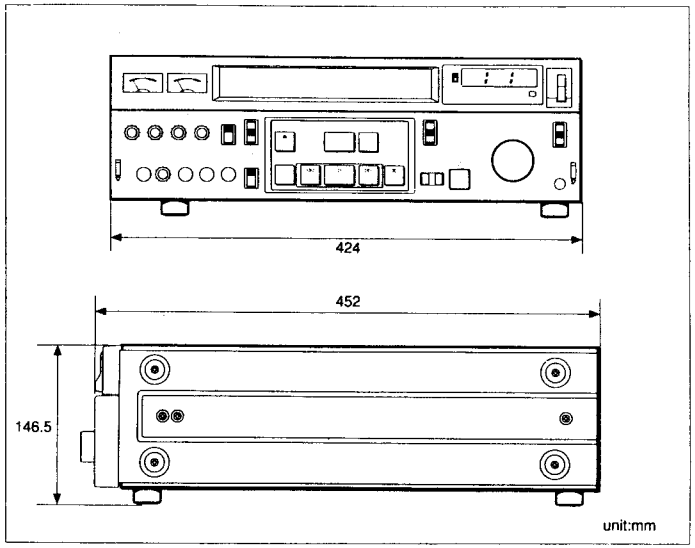
Note

If you set menu operation and turn off the power within 15 seconds of the power being turned on, however, the newly registered data will be lost.

Specifications

General

Power requirements	220 to 240 V AC, 50/60Hz
Power consumption	49 W
Operating orientation	Horizontal
Operating temperature	5°C to 40°C (41°F to 104°F)
Dimensions	424 × 146.5 × 452 mm (w/h/d)
	(16 3/4 × 5 7/8 × 17 7/8 inches)
	Excluding projecting parts and controls



Weight	Approx. 14 kg (30 lb 14 oz)

System

Signal system	PAL color signal, CCIR standard/NTSC4.43 color signal, EIA standard
Recording system	Rotary 2-head azimuth recording, VHS format
Luminance	FM recording
Color recording system	Converted subcarrier direct recording

Specifications (Continued)

Tape transport

Tape speed	23.39 mm/sec.
Recording and playback time	Approx. 120 minutes (E-120 cassette)
Fast forward and rewind time	Within 2.5 minutes (E-120 cassette)
Tapes	VHS or S-VHS tapes
Search	Still, 1/20 to 10 times normal speed in both forward and reverse directions

Video

Inputs	VIDEO IN (BNC type) × 2 for bridge connection Composite video signal: 1.0 $^{+1.0}_{-0.5}$ Vp-p, 75 Ω, unbalanced, sync negative S VIDEO IN (4-pin mini DIN) × 1 Luminance signal: 1.0Vp-p, 75 Ω, unbalanced Color signal: 0.3Vp-p, burst,75 Ω, unbalanced
Outputs	VIDEO OUT (BNC type) × 1 Composite video signal: 1.0 ±0.2 Vp-p, 75 Ω, unbalanced, sync negative S VIDEO OUT (4-pin mini DIN) × 1 Luminance signal: 1.0 Vp-p, 75 Ω, unbalanced Color signal: 0.3 Vp-p, burst, 75 Ω, unbalanced TV OUT (8-pin multi) × 1 Composite signal: 1.0Vp-p, 75 Ω, sync negative
Horizontal resolution	More than 240 TV lines (VHS) More than 400 TV lines (S-VHS)
S/N	45 dB(color) (VHS)
Recording level control	Automatic

Audio

Inputs	AUDIO IN NORM CH-1/L, CH-2/R (phono jack) × 1 each –6dBs, 47 kΩ, unbalanced AUDIO IN Hi-Fi CH-1/L, CH-2/R (phono jack) × 1 each –6dBs, 47 kΩ, unbalanced MICROPHONES CH-1, CH-2 (phone jack) × 1 each –60dBs, 3 kΩ, unbalanced
Outputs	AUDIO OUT NORM/Hi-Fi CH-1/L, CH-2/R (phono jack) × 1 each –6 dBs (47 kΩ load), unbalanced AUDIO OUT Hi-Fi CH-1/L, CH-2/R (phono jack) × 1 each –6 dBs (47 kΩ load), unbalanced MONITOR OUT(phono jack) × 1 –5 dBs (47 kΩ load), unbalanced TV OUT (8-pin multi) × 1 –5 dBs (47 kΩ load), unbalanced HEADPHONES (stereo phone jack) × 1 –18 dBs to –48 dBs (8 Ω load), unbalanced
Tracks	4 tracks (Hifi:2, Normal:2)
S/N	43 dB (normal audio at 3% distortion) (Dolby off)
Frequency response	50 to 12,000 Hz(normal audio) 20 to 20,000 Hz(hi-fi audio)
Dynamic range	More than 90 dB(hi-fi audio)
Recording level control	Manual or limiter system selectable

Synchronism

Input	SYNC IN (BNC type) × 1 0.3 to 4Vp-p, 75 Ω, unbalanced, sync negative

0dBs=0.775V

1-39

Specifications (Continued)

Supplied accessories

AC power cord(1)
Operating instructions(1)

Optional accessories

SVRM-100 Remote control unit
SVBK-100 33-pin interface board
SVBK-120 RS-232C interface board
SVBK-130 Satellite interface board (Available soon)
SVBK-140 RS-422A interface board
SVBK-150 Digital noise reduction board
SVBK-160 Time code board
RM-450CE Editing control unit
YC-30V/15V/10V S video cable
SYC-2/5 S video cable (With locking rings)
RK-C74 Audio cable
RMM-980 Rack mount kit

Design and specifications are subject to change without notice.

Glossary

AGC
Abbreviation for automatic gain control. In this VTR, the video input signal is automatically raised or lowered.

Assemble recording
A recording technique where sequences are recorded, one after another. The user need only determine the recording start point on the previously record segment. The VTR achieves continuity.

Bridge connection
A method of connection where a signal is input and output through a unit that is connected to another unit. Also called loop through.

Chrominance signal
The signal that carries information about hue and color. Also called the C signal.

Composite video signal
A signal that consists of video, sync , and color burst signals.

CTL signal
Abbreviation for control signal. In VTRs, regular pulses are used to synchronize the tape travel and the scanning position of the video heads. These are recorded on a special track so that the video heads can scan the playback tape accurately.

Dubbing
An audio signal recording technique that allows a signal to be inserted at any point on a recorded tape.

Framing
A picture is constituted from 30 frames (0 to 29) in one second. One frame consists of two fields. Setting the frame value to an odd number for the first, third,...frame and to an even number for the second, fourth, ...frame is called (Y signal) framing.

Jitter
Small, rapid aberrations in the horizontal or vertical size that may appear on a display because of phase deviations in the synchronized signal. This may be caused by noise or inconstant tape transport or head drum rotation when the VTR is recording or playing back.

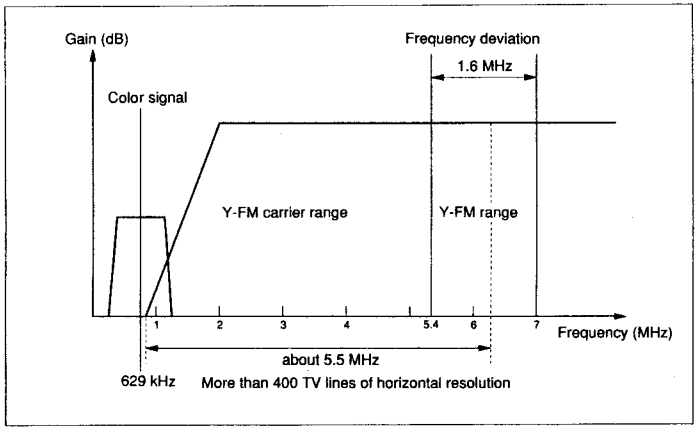
Luminance signal
The signal that determines the brightness of the picture.

S video signal

Separated video signals: Y(luminance) signal and C(chrominance) signal. Separating the video signals results in less deterioration, compared with the composite video signal mixed Y and C signal.

S-VHS format

S-VHS is a newly developed format that provides high resolution and high picture quality (more than 400 TV lines of horizontal resolution). This is made possible by the S-VHS video signal recording/playback circuit and high-quality S-VHS tape. The VTR cannot record/play back ordinary VHS tapes in the S-VHS format.



S-VHS format

Sync signal

A reference signal consisting of vertical and horizontal sync signals and used to synchronize the time codes. Also called the composite sync signal.

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